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BUREAU OF MINES

State Capitol, Denver

JOHN T. JOYCE, *Commissioner of Mines*

ANNUAL REPORT

for the Year 1934

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DENVER, COLORADO
1935

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JOHN T. JOYCE, *Commissioner of Mines*

ANNUAL REPORT

for the Year 1934

B. J. Hoefnagels.
Papers
gift of
Mrs. Fred Smith.

UNIVERSITY OF COLORADO
HISTORICAL
COLLECTIONS

BRADFORD-ROBINSON PRINTING CO.
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1935

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LETTER OF TRANSMITTAL

To His Excellency,
THE HONORABLE EDWIN C. JOHNSON,
Governor of Colorado.

Sir: In compliance with Section 3392 of the Compiled Laws of Colorado, 1921, I have the honor to transmit herewith the Annual Report of the State Bureau of Mines for the year 1934.

Respectfully submitted,

JOHN T. JOYCE,
Commissioner of Mines.

State Capitol,
Denver, Colorado,
June 10, 1935.

PERSONNEL OF THE BUREAU OF MINES OF THE STATE OF COLORADO

JOHN T. JOYCE, Commissioner of Mines	Denver
GEORGE BECKER, Inspector, District No. 1	Denver
HERRICK McLEOD, Inspector, District No. 2	Colorado Springs
R. J. MURRAY, Inspector, District No. 3	Salida
J. F. CLOUGHER, Inspector, District No. 4	Silverton
ETHEL F. McCARTHY, Chief Clerk	Denver
MRS. A. M. NICKERSON, Stenographer and Assistant Clerk	Denver

DISTRICTS OF INSPECTION

DISTRICT No. 1—[a]Adams, Arapahoe, Boulder, Clear Creek, Denver, Gilpin, Grand, Jackson, Jefferson, Larimer, Logan, Moffat, Morgan, Phillips, Routt, Sedgwick, Washington, Weld and Yuma counties.

DISTRICT No. 2—[b]Baca, Bent, Cheyenne, Crowley, Custer, Douglas, Elbert, El Paso, Fremont, Huerfano, Kiowa, Kit Carson, Las Animas, Lincoln, Otero, Prowers, Pueblo and Teller counties.

DISTRICT No. 3—[c]Chaffee, Delta, Eagle, Garfield, Lake, Mesa, Park, Pitkin, Rio Blanco and Summit counties.

DISTRICT No. 4—[d]Alamosa, Archuleta, Conejos, Costilla, Dolores, Gunnison, Hinsdale, La Plata, Mineral, Montezuma, Montrose, Ouray, Rio Grande, Saguache, San Juan and San Miguel counties.

On August 2nd, 1928, all former Departmental orders of temporary transfers from one district to another were vacated and in lieu thereof the following temporary changes in the different districts were made by order of the Commissioner of Mines, to-wit:

[a] All of the county of Summit and that part of Park County lying north and west of a line drawn from the southwest corner of Jefferson County to the southwest corner of Park County were temporarily transferred from District No. 3 to District No. 1.

[b] That part of said Park County lying south and east of said line was temporarily transferred from District No. 3 to District No. 2.

[c] That part of Gunnison County in the extreme northwest corner and lying north of the 39th degree of latitude, that part of Saguache County lying south and east of the Continental Divide and all of the counties of Mineral, Rio Grande, Conejos, Alamosa and Costilla were temporarily transferred from District No. 4 to District No. 3.

[d] All of the counties of Mesa and Delta were temporarily transferred from District No. 3 to District No. 4.

The remainder of all said districts to be left intact as now established by law until further changes are made by order of the Commissioner of Mines, or by the legislature of the State of Colorado.

INTRODUCTION

The activities of the Bureau of Mines during 1934 were confined to the usual routine, no funds for any special work being provided.

The four inspectors visited practically all of the operating metal mines, quarries, mills, smelters and railroad tunnels at least once during the year. Most of the larger operations were inspected more than once. The object of these inspections is to eliminate, as far as possible, unsafe conditions and practices in the operation of such properties. In general, this work meets with the lively cooperation of the operators.

The Commissioner and Inspectors are anxious to help the mining industry in every legitimate manner and wish to be called upon whenever their services can be used.

Inquiries regarding the mines and mineral resources of the state and questions regarding the demand and market for less common mineral products are constantly coming into the Bureau. An earnest endeavor is made to furnish the information desired. Helpful cooperation is often received from the Colorado Geological Survey, the Colorado Mining Association, the United States Bureau of Mines and the United States Geological Survey.

The Commissioner takes this opportunity of expressing his appreciation of the loyal and efficient services that have been rendered by the entire personnel of the Bureau during the past year.

METAL MINING IN COLORADO, 1934

By John T. Joyce
(Commissioner of Mines)

Of all earthly products gold is the most alluring to mankind. It was gold that first attracted the attention of the sturdy pioneers to our territorial wilds and drew the old prospector with his crude and antiquated methods of mining and milling into the uttermost recesses of our foothills and mountains where he found it in plentiful quantities in both lode and placer mines.

Geologically, reports and charts by Professor Hayden on the general geology of the state were their only guide. But these were employed by only a comparative few, the average old prospector depending more on what is commonly called ''a good nose for ore'' and a keen vision, which afforded him a peculiar ability to trace float to its source. Many of our great mines were discovered by men who knew less about geology than a casino gold digger. It is not reasonable to assume that nature in all its scorings revealed only the presence of the rich mines that Mother Earth created within her subterranean recesses.

Croppings Aided Miners

The greater part of our mines upon which the glory of the past was built were discovered in what is known as exposed territory where croppings were revealed to view, or, if only slightly covered, could be located by the keen tracing of float and trenching. It was in this field that the old prospector was most successful, and though not entirely exhausted, it is today quite limited.

Of Colorado's 30,000 square miles of mineralized territory, its total production of metallic wealth in gold, silver, base and rare metals, about $1,760,000,000, came from less than 2,000 square miles of such exposed territory. Thus it is obvious that the larger number of rich veins or deposits remaining to be discovered are concealed beneath rock slides, soil, gravel, volcanic flows and other overlying geological formations. Their existence can be more economically determined by the employment of scientific methods through the use of geophysics in conjunction with geological surveys.

Gold

The first discovery of gold in any appreciable quantity in Colorado was in 1858. Since that time our mines have produced in the neighborhood of $745,000,000 in refined gold, a remarkable average of about $10,000,000 per year for that period. Of the total gold production above mentioned about $31,000,000 came from placers, the balance, $714,000,000, from lode mines.

Comparing these figures with the gold production of other states of the western fields they show that Colorado stands second in the total production of gold, being exceeded only by California. The gold production of Colorado is more than double that of any other state in the union with the exception of Nevada, whose total production to date is about $470,000,000. The total production of the Territory of Alaska is in round numbers about $425,000,000.

Since the bulk of California's gold production came from its great placer mines, the figures show that Colorado leads all states in the production of gold from lode mines.

Silver

Of all the silver-producing states Colorado ranks first with a total production to date of 667,650,042 refined ounces. The other large silver-producing states rank as follows: Montana, second; Utah, third; Nevada, fourth; Idaho, fifth; Arizona, sixth; the remaining states ranging from 100,000 to 1,000,000 ounces.

Since the source of all gold and silver is found in lode mines which constitute the real foundation for the mining industry, I feel perfectly justified in stating that Colorado has within its confines the greatest and most inviting gold and silver field of any state in the union.

Production

The production of gold, silver, copper, lead and zinc by counties for the state of Colorado for the years 1933 and 1934 will be found in Table I inserted in this report. The increase in total production in 1934 was $7,008,847 or nearly double the production in 1933.

Gold

The total production of gold in value in 1934, according tc the figures of the Federal Bureau of Mines, was $11,356,070, an increase of $5,149,394 over the preceding year. The ratio of the total increase was about 83%. Of the ten principal gold counties of the state producing better than $200,000 in gold, all said counties with the exception of San Juan, which had a very slight falling off because of the temporary suspension of operations of one of its mines, showed remarkable increases as follows:

Boulder	444%
Summit	214%
Clear Creek	195%
Gilpin	155%
San Miguel	133%
Eagle	120%
Park	99%
Lake	94%
Teller	60%
Ouray	21%

Boulder had the greatest proportionate increase of any county in the state, its production being $612,900 in 1934 as against $112,528 in 1933. The significance of this remarkable increase is obvious in that it disproves for all time the ill-founded fallacy that the mines of Boulder county contain only "knife blade" veins and small pockets of ore. In fact, last year's developments have proven that Boulder county contains enormous veins of medium and low grade ore, which could not be treated in the olden days on account of the high cost of treatment, but which now, due to improved metallurgical conditions, can be handled most successfully.

Without going into minute detail the foregoing conclusively confirms the contention I have made for the past decade, that Colorado has the most extensive and, proportionately, the least developed mineral area of any state in the union. Scores of gold mines are found in all parts of the state which in the early periods yielded fortunes both great and small from comparatively shallow workings and very few exceed a depth of 500 feet. When they encountered either heavy inflow of water or a material change in the character of the ore calling for entirely different methods of treatment and expensive equipment for continued operations, they simply quit, and by far the greater number of those mines have been idle for all the intervening years.

Neglected Districts and Mines

In almost every county will be found districts neglected for the past thirty or forty years, several of them with good records of producing high grade ores. Because of poor roads, inaccessibility, antiquated methods of transportation and the high cost of freight and smelter treatment, their medium and low grade ores could not be mined and treated at a profit. This caused suspension of all the mines in many such districts which now, with up-to-date improved metallurgical processes, and modern means of transportation could be profitably operated.

Many mines in the older districts may be similarly classified as neglected properties which were operated profitably during the periods mentioned, yielding fortunes both great and small from shallow operations, which if now properly equipped for deeper and more thorough development would undoubtedly be added to Colorado's list of producing mines annually.

The American Smelting and Refining Company was organized in 1899. At that time there were eleven smelters in full operation in the state of Colorado besides ore buyers constantly visiting all of the mining camps soliciting smelting ore for outside plants. Thus the mines of the state, producing prolifically at that time, found a ready and satisfactory market for their ore.

Upon completion of its organization the American Smelting and Refining Company took over the eleven smelters mentioned and within a short time thereafter six of them were dismantled and put out of commission, leaving only five smelters in active operation to handle the ores produced from all of the mines of the state. It soon became evident that the capacity of these five smelters was insufficient to handle the total daily production of the aforesaid mines. Thus curtailment of mine production was necessary and was quickly enforced. This, in many cases, heaped a very serious hardship upon the larger producing mines as many of them were operated through shafts and levels below drainage tunnels which entailed heavy expense to keep them unwatered. This was largely responsible for the suspension of many operating mines in the first fifteen years of the present century, and had a corresponding effect upon the reduction of the number of men employed in the mines from 1900 up to and including 1913.

During the great World War when the price of metals, including silver, had reached the highest point in history, all the mines in this state and other states, in order to take advantage of the aforesaid high prices, employed as many men as they could work at forced extraction of ore, paying little, if any, attention to further developments and the maintenance of their ore reserves. Therefore, at the close of the war these mines found themselves in a depleted condition as to the better and medium grades of ore that could be handled at a profit by the most common system of treatment in vogue at that time, namely, smelting.

When the armistice was declared in 1918 the belligerent nations, both the victor and vanquished, found themselves loaded down with tons of the refined metals mentioned. They were broke and in debt, and having no further use for such metals, threw the same on the market at the best price obtainable. This caused a decline in the price of metals as low as history records, or nearly so.

Shortly after the close of the war it soon became obvious that the mines in the condition mentioned were unable to supply a sufficient quantity of ore of the grade the smelters could treat profitably for themselves and the producers. This brought about justified curtailment of smelting operations and complete closing down of many plants in the various states of the western field. In the meantime, metallurgy had made wonderful advancements. New processes, such as selective flotation, cyanidation, etc., had been invented and perfected so that the low grade ores of the country could be treated at very low cost. At the centrally located final reduction marketing plants in all other states excepting Colorado these new processes were successfully introduced and placed in operation so that the medium and lower grade ores of the mines could be profitably treated. In other states they built up to meet that condition, while in Colorado they tore down, leaving only two smelters intact—one at Leadville, the other at Durango, and the Golden Cycle cyanide plant at Colorado City. This condition, which still prevails in Colorado, resulted in the closing down of scores of mines in various parts of the state that could now successfully operate were they given the same opportunities they have in Utah, Arizona, Montana and other states in the western field.

It is well known and has been proved time and again that there is an abundance of ore in the mines of the state of Colorado, both in the old, abandoned and newly discovered mines, to supply sufficient ore to keep one or more modern reduction plants in constant operation. Recently a survey made by the state by a committee acting in conjunction with the PWA found that the mines of the state contain an abundance of ore in every district and in order to bring them forth as potential producers all that is needed is a coordinated milling system with one or more centrally located final reduction and marketing plants, cooperating with local concentrating plants in such districts. This is made clear in a report that will be submitted to the State Planning Board suggesting governmental aid for the construction of such a milling system together with the building of good roads into the remote camps, and drainage tunnels for such great districts as Leadville, Cripple Creek, Aspen, Gunnison, and the San Juan. If the aim of the present administration is to bring about permanent relief of the unemployed, it could not devote and apply any part of the great fund set apart for relief purposes to better advantage than the granting of this request.

Generous Contributor

There is no industry that contributes more generously to the coffers of the federal government than mining, and none that up to date has received proportionately less consideration for its uplift and welfare. The Federal Bureau of Mines is one of the most important subdivisions of the interior department. It has now at its head, in the person of Hon. John W. Finch, a scientist and a mining engineer of international reputation, who thoroughly understands the needs of the mining industry.

In the past the work of this most important department of the federal government has been hindered by insufficient appropriations. However, it is cheering to note that the present congress has taken some recognition of this fact by a materially increased appropriation, but even at that it is still inadequate to cover the great amount of highly important work entailed upon this department to cover the great mining fields of the nation. Its needs should receive careful consideration at the hands of congress at all times and sufficient means should be appropriated at all times so that it could properly function for the general uplift of the great mining industry of the nation which gives permanent work to hundreds of thousands of employes in and about mines, and at least triples that number in contributary industries.

No better market could be established and maintained for the product of farm and factory than the rehabilitation of our mining camps. The money spent in mining goes into the channels of commerce and trade quicker than that spent in other industries. The miner cannot eat the product of his toil; he cannot put it on his back as clothing, or over his head for shelter, nor stuff it in his stove or furnace for heat. He must pay from his earnings for all the necessities of life and thus he contributes largely to numerous contributary industries and, further, every dollar of gold he produces finally finds lodgment in the U. S. treasury, and there it remains imperishable as the foundation of at least $30 worth of national credit. Silver, likewise, since it has been nationalized in proportion to gold under the ratio of value that we hope to see soon established by its ultimate remonetization.

The mining industry has never appealed to the federal government for aid. It stood bravely on its own feet and fought its own battles and uncomplainingly endured suffering from many governmental actions that tended more to its depression than its uplift. In the five years preceding 1929 the agricultural industry, which is rightfully regarded as the leading industry of the nation, contributed in the way of revenue to the U. S. treasury $150,250,000 and received helpful appropriations of $510,000,000. During the same period the mining industry contributed in the way of revenues to the U. S. treasury upwards of $800,000,000 and its appropriation, mostly for the support of the federal bureau of mines, was $11,000,000.

MISCELLANEOUS METALS

Molybdenum

The largest known molybdenum mine in the world is located at Climax, Colorado, and is being operated by the Climax Molybdenum Company. During 1934 the reported production was 8,378,638 pounds of 100% molybdenum. In addition to the Climax property molybdenum is known to occur in appreciable quantities in many other districts of Colorado.

Tungsten

The largest and most productive field is at Nederland in Boulder county. The reported production of tungsten in Boulder county in 1934 was $116,903.57. A small amount of tungsten was produced in San Miguel county.

Manganese

Manganese is found in large quantities in almost every important mining county in the state, but of late years because of the cheapness of imported manganese there has been very little activity in its production. Here is an industry, dormant, whose revival by proper tariff protection would give employment to many thousands of men.

Radium, Uranium and Vanadium

Ores containing these metals are found in many counties of the state, but the most extensive field is near Naturita in the western part of Montrose county. The ore in this field is known to contain a comparatively high percentage of radium. From 1913 to 1922 these properties were quite actively operated for their radium content, but being unable to compete with the low price of foreign produced radium the mines have been idle for the past twelve years. Another case inviting congressional attention.

Nonmetallics

Operations of nonmetallic mines and quarries during the past few years in Colorado have developed a most important industry. Any demand for building or monumental stone of every kind, such as granite, marble, onyx and so on, can be fully supplied from their stupendous stores in various parts of the state. Many quarries have been opened along the eastern mountains, the Arkansas and Platte rivers, in Gunnison, Pitkin and in other counties of the western slope. Building sands and gravels are found in abundance along all rivers and streams.

The clay deposits of Colorado for all purposes are unexcelled. It is highly probable that any desired kind of clay may be found within the state's confines. Beryl, feldspar, fluorspar, bentonite, sillimanite, lime, gypsum and the like are found in large quantities. Enormous oil shale deposits, also bitumen, asphalt and tar sands exist in several of the western counties. Mica, jefferisite, and other insulating materials are widely distributed throughout the state.

Placers

Placer ground is known to exist in areas of more or less extent in every gold-producing district of the state. In many they embrace multifold thousands of acres of placer ground and offer a fruitful field for exploitation. In the earlier days when the fields were new the ''Old Timer'' with his pick, shovel, pan, sluice and rocker often made fortunes from small patches of ground which were rich in gold content measured by the cubic yard. But that field, very extensive in those days, is now more or less limited, and that which remains requires careful and energetic prospecting and testing on the ground itself instead of through unverified prospectuses or other means of promulgation. The advanced price of gold materially enhances the chances of success of present day placer mining.

Operating Mines and Employment

According to the Federal Bureau of Mines the total number of lode mines producing in 1934 was 929. The number of working lode mines upon which reports were filed in the State Bureau of Mines was 672, an increase of 321 over the preceding year. The remaining properties were lode mines producing lesser amounts varying from $100 to $2,000 from intermittent operations.

In 1913 the number of men employed in and about mines in the state of Colorado was in round numbers 24,000; in 1932 not over 4,000 men were so employed, a decline of 83% during that period. During the same period the decline of employment in

Idaho was only 31% and in Utah about 42%. The difference between these percentages is strongly indicative that the lack of such plants was the principal cause for the excessive decline of mining in Colorado, as compared with other states.

Because of the number of small operations in both lode and placer mines, it is impossible to give the exact number of men employed in 1934, but an estimate of 12,000 in round numbers would be most conservative, which is double the number of men employed during the preceding year.

Acknowledgment

Thanks are due to John W. Finch, director, and C. W. Henderson, engineer, the United States Bureau of Mines, for the production statistics regarding the common metals.

CONDENSED REVIEW OF MINING DISTRICTS BY THE FIELD INSPECTORS FOR 1934

DISTRICT NO. 1 by George Becker

With the present price of gold and the price of silver on the increase, the mining activities continue to increase with an encouraging trend. During the year 1934 there were 383 operations inspected and 350 reports filed. A total of 4,885 men were employed and this does not include 500 or more men who were engaged in both placer and lode mining on a small scale working from one to three men and developing their own claims. Comparing these figures with the activities of the preceding year an increase of 65% or better is shown.

The Alma district, in Park county, led all other counties in this district in the production of gold. This county has a past record for producing high grade gold ore, having produced the highest average grade of gold ore in the world for a number of years past. This is mostly due to new and deeper development of the London vein system along the course of the London Fault Line. This fault can be traced for six or more miles on surface, and only about two miles of this distance has been developed to any extent, which makes the undeveloped portion of the London Fault Line a very attractive and worthy field for developing new mines, and such an undertaking with sufficient financial backing should produce good results. In the other mining camps of this county there were good results obtained from both placer and lode mining, and there were a number of mining deals made and others are pending.

Breckenridge and the other mining camps of Summit county are scenes of new activity in both placer and lode mining. This county is noted for its rich and extensive placer gold deposits along the Blue River, and the small creeks and gulches that are tributary to the upper section of this river. These placers are worked extensively with powerful dredges, operated by electric power, each having a capacity of handling 5,000 to 6,000 cubic yards of gravel daily. There are also a number of operations using hydro-water power and power shovels with sluice boxes in the small gulches to separate the gold from the gravel. All these operations are meeting with good results.

The Front Range section of this district comprises the counties of Boulder, Clear Creek, Jefferson and Larimer. The mining camps of these counties are becoming beehives in both placer and lode mining, the former taking the lead in producing gold, silver and tungsten. The production of tungsten is mostly confined to the Nederland district in Boulder county. There has been an increase in the number of mining deals made, and others are pending as engineers and scouts comb the hills for good mines. There are a number of mines in this district that have possibilities of making good mines, with sufficient capital for further development, and are worthy of investigation by those who are seeking metal mines for an investment. The Front Range district has been busier than in years, showing an increase in production, the number of mines working and the number of men employed, and the activity of the preceding year is more than doubled. The results from a careful survey of the Front Range district show that the mining industry is very much in need of a smelter located at a suitable point where it would best serve the whole district.

The western slope section of this district comprises the counties of Jackson, Grand, Moffat and Routt. The mining camps of these counties have also shown scenes of new activity in both placer and lode mining. Most of the operations were on a small scale, with encouraging results. This western slope section has large areas of placer ground which show good placer gold values, and is worthy of investigation by those who have sufficient financial backing to carry on placer mining on a large scale.

This year there were twenty-seven ore mills operated in different parts of this district. This shows an increase of five over last year. When operating, these mills are treating 3,000 or more tons of mill ore daily. At this time there are three new mills under construction and this does not include a number of pilot mills operated in different sections to determine the value and the best method for treating various kinds of ore. There were also a number of small five- and ten-stamp mills operated in different parts of this district by prospectors. All the mills mentioned were operated with good results.

Judging from the new activities and the continuous number of inquiries for metal mines and the new organizations under way and those that are just getting started, it would seem that the coming year will show a still greater increase in production and employment.

DISTRICT NO. 2 by Herrick McLeod

Mines of the Cripple Creek District produced 400,000 tons of ore in the year 1934. The gross value was over $4,000,000. The largest producer was the Cresson mine. A plan of development has been followed in this mine with the result that, while production is greater than for several years past, ore reserves in the mine have also increased. Second in production is the United Gold Mines Group, which now includes the Portland mine.

New ore deposits of unusual size have been opened in the Jo Dandy and John A. Logan mines. The ore body in the Jo Dandy was found at a depth of 350 feet, and that in the Logan at a depth of 800 feet. They might be termed ''hidden'' ore bodies which were discovered by underground prospecting. The Deadwood mine is making carload shipments of ore worth $125 per ton.

More than seventy new operations have been reported. In some cases an operator has secured leases on several pieces of ground located in different sections of the district and has started a separate operation on each piece. The Premium Gold Mining Company and Aitken and Kay, under the local direction of George Kay, have equipped four shafts, on four separate leases, and are producing ore in all of them. The Hidalgo Gold Mines, Inc., is operating three shafts, on different properties, and all three are producing. Other companies are operating two shafts on separate leases. Several mines which have a record of past production are equipped and ready to go as soon as funds for development are secured. In several new operations the work of erecting buildings, installing machinery, retimbering, and cleaning up, is nearing completion. They will soon be producing from ore in sight.

All signs point to increased production in 1935.

The mines of the Cripple Creek District supply 93% of the tonnage treated by the Golden Cycle Mill at Colorado Springs. The Golden Cycle Corporation has expended $200,000 during the year on improvements to increase the capacity and the work is still going on. The capacity of the mill is now 1,500 tons daily. The mining and milling of Cripple Creek District ores provides employment for 2,500 men.

More mining is being done in Custer county than for several years past. Several carload shipments of silver-lead ore have been made from the Passiflora and King of the Carbonates mines. Good ore is produced in the Vulcan Tunnel. Gold-bearing ore was produced in the Cloverdale mine near Hillside and in the Akin property on Ophir Creek and was treated in mills on the properties. Shipments of vermiculite have been made. Large deposits of vermiculite have been opened in Dead Mule Gulch and in Gem Park.

The mines and quarries of Fremont county have produced fire clay, limestone, feldspar, granite, mica, silica, travertine and beryl. There has been quite a large increase in the tonnage of limestone and of feldspar.

Altogether about 4,000 men are employed in District No. 2, in mining and in other operations, which are under the jurisdiction of the State Bureau of Mines.

DISTRICT NO. 3 by R. J. Murray

There is a marked improvement in mining conditions in District No. 3 over that of the past few years. The national aid given mining through the increase in the price of gold has been a boon to the gold mining districts within our state, while the increase in the price of silver has reacted very favorably in camps where silver is the predominating metal. A condition of material interest to the mining people, and one that may be bettered by the administration the coming year, is a further increase in the price of silver and hopes for higher prices on lead, zinc and copper.

Lake County—Renewed activity in mining in this county is very noticeable by the number of men employed over that of the past few years. The ore bodies at the Climax Molybdenum are now developed to the point where, without any fear of contradiction, they cannot be exhausted within the next hundred years. Many thousands of dollars have been expended by this company during the last year on new mine and mill equipment. Also, no expense has been spared to put through a compulsory safety campaign, including every man from the superintendent down, given under the direction of a company safety inspector and instructor. Approximately 5,000 tons of ore were milled daily for a large part of the year. At times the tonnage was reduced to 3,500 tons daily.

The Ibex group had a larger production of ores this year than it has had for several years past, and also a perceptible increase in the number of men employed.

The Zena Leadville Mining Company, operating on the Resurrection, Sedalia and other holdings, is carrying on a campaign of prospecting and development work entirely.

The Venir lease has produced a larger tonnage of gold ores during the past than for any year in its history.

The Fortune Gold Mining Company, a new company to enter the Leadville district, has taken over the Fortune property. It has installed a new double-drum, electric hoist and electric compressor. A portion of this shaft has been retimbered and work started on the 1,000-foot level.

The Valley, Ballard, Monarch, Fanny Rawlins, Highland Mary, Amity and other small operations are producing their quota of the ores being produced in Lake county. The Dinero holdings, inactive for a number of years, have recently been sold. The new owners contemplate the erection of a 150-ton mill at this property in the very near future. The Tennessee Park Milling Company, largely composed of California people, has, during the past summer, erected a fifty-ton flotation mill in the St. Kevin district adjacent to a number of famous old-time silver and gold producing mines. The Jennie June mine in Tennessee Park is being equipped with hoist and compressor preparatory to starting to unwater and repair the shaft. Some ores are being shipped from the Granite section of Lake county, while several small operations are under way in the Twin Lakes district. The water bore in this section employs a large force of men. Preparations are under way to reopen the Garbutt mine which has been inactive for several years. It was formerly one of the largest tonnage producers in the Leadville district.

Approximately 625 to 650 miners are employed in and about the mines in this county, including the number employed on the Lake county side of the Twin Lakes Tunnel project.

Saguache County—Considerable examination work was done during the past summer on the Esperanza mine in this county.

This work consisted of examination by diamond drilling, and also in mining a sufficient tonnage for a mill test. It is said that if the results from this examination are satisfactory a 100-ton mill will be erected on this property. The district along the Sangre de Cristo range has been very active through the past summer. The Independence mine was reopened after many years of idleness. The Golden Treasure tunnel was reopened. A fifty-ton flotation and concentration mill and aerial bucket tram was erected on the property. Several rich finds have been reported from this section within the past few months. A number of small operators are working the Bonanza district with some good gold and silver finds reported.

Approximately 100 miners are employed on the properties in this district.

Gunnison County—A number of men have been employed at the marble quarry and dressing plant during the year. This work consisted of mechanical changes at the dressing sheds and preparing the quarry for future production, while some mining was carried on in the Crystal district.

Seventy-five or more men are actively employed in the quarries and mines in this section of Gunnison county.

Conejos and Costilla Counties—These counties had more than their quota of prospectors throughout their known mineralized areas during the year, some of which have shown promising results. Some forty-odd prospectors and miners are in the mountains of these counties.

Chaffee County—Metal mines long inactive, due to the low price of metals, are again being reopened and producing in this county. The Romley and St. Elmo sections have been thoroughly scouted by engineers representing eastern capital. The Ore Chemical Company has, during the past summer, made many mechanical changes in its mill at St. Elmo, and is said to have worked out its separation and metallurgical problems to its entire satisfaction. At Monarch the C. F. & I. lime quarry is working a large force of men and is shipping many thousands of tons of lime rock to the Pueblo plant. Several small operators are reopening old properties in this district. The recent fluorspar discoveries made in this county are developed to the point where successful operation is definitely assured. At Granite, in Chaffee county's mining district, several old-time properties have been reopened during the year 1934. The granite quarries of this county have been fairly active during the past year and have marketed considerable stone.

More than 200 men are employed in the fluorspar operations, stone and lime quarries and metal mines and mills.

Eagle County—The Empire Zinc, the largest producer of sulphide ores in the state, has shipped approximately 600 tons daily of crude copper-iron sulphides during the past year. The underground mill has been inactive for two or more years. A large campaign of new prospecting and development work is planned and will be carried out by this company during the coming year. This company maintains a staff of first aid and safety men.

The El Capitan property, located in the southeast part of Eagle county, inactive since 1880, has been reopened by eastern capital. A 550-foot incline shaft is under way at this time, while the management contemplates the erection of a 150-ton mill during the coming year. The Champion incline has produced a fair tonnage of gold and silver ores during the year, while fifteen or more small leasers have been shipping from the Belden Canon section. Several of these are sending out occasional shipments of high grade gold ore. A company has recently started operations on the Polar Star group in the Fulford district.

Approximately 350 men are actively engaged in mining in this county.

Pitkin County—The Midnight mine and mill have been very active during the year and have sent out a fair tonnage of both crude and concentrated ores from this property, besides keeping a small amount of new prospects and development under way. The Colorado Duluth Mining Company, Inc., with main offices at Duluth, Minnesota, has, during the past year, taken over the combined mining properties owned by the D. R. C. Brown and Wyman estates, the first time these two ownerships have been held and jointly operated by one concern. The primary work being done by this company consists of the reopening of a number of tunnels above the water level for a more complete and up-to-date geological survey of this basin, together with the carrying out of a large campaign of diamond drill work now under way, and also the retimbering of a 900-foot winze between the upper and lower Durant tunnels to facilitate the handling of men, supplies and ores when actual ore breakage begins. A small amount of ores is being sent out by leasers from the properties controlled by this company. A new tunnel known as the Highland Tunnel was started during the past year with the lower Midnight workings as the objective. The Hope Tunnel and a few other smaller operators are actively engaged throughout the county.

Nearly 200 men are mining in this county, including the number employed on the West Portal-Twin Lakes water tunnel.

Mineral County—The fluorspar mine at Wagon Wheel Gap was reopened during the past year and is now producing a large tonnage of ores for the company's plant at Pueblo, together with the employment of a large number of men at the mine and mill.

The increase in the price of silver given by the present administration was a boon to this old camp and made possible the reopening of a number of properties this year that have been inactive for several years past. Such old producers of silver ores as the Last Chance, Volunteer, Amethyst, New York, Pittsburgh, Commodore, Recovery Tunnel and others are now shipping several carloads of ore weekly. The Bentonite mine has operated throughout the past year on a reduced tonnage of clarifying clay.

The Corsair Tunnel was repaired and the water taken out of the shaft a distance of 200 feet below the tunnel level. Agents for what is said to be an eastern concern have been in Creede for some time looking into the possibilities and probable erection of a 500-ton mill. Creede can and will furnish the ores when a modern and up-to-date plant is erected.

Approximately 200 men are employed in the mines in this county.

Garfield County—Some work has been carried on in the Vanadium sandstone adjacent to Rifle and Newcastle in this county. A few men have been employed at the U. S. Vanadium Company's mill, where a supply of vanadium is stored and shipped as the market calls for it. The Glenwood lime quarry has been engaged during the summer in mining and shipping 460 tons of lime rock weekly to the Holly Sugar Corporation refinery at Delta.

Fifty miners and prospectors are employed in this county.

Rio Grande County—The Summitville Consolidated Mines, Inc., operating the Little Annie, Reynolds, Iowa, Golconda and several other claims in the Summitville district, has recently completed the construction of a 100-ton flotation and cyanide combination mill, twenty-six miles of an electric power line from Del Norte to the mill and mines, a one-half-mile bucket tram, three combination bunk and boarding houses, blacksmith and machine shops, timber sheds, warehouses, offices, etc. Sixty-pound rails are being laid in the Reynolds tunnel for electric motor haulage. The mill is operating to nearly its capacity and is said to be making a high rate of recovery. A new road on a 6% grade is being completed by the government CCC workers into Platoro. This road, when completed this summer, will no doubt cause some activity in this well-known mineralized section. It is said that an eastern company, through its agent, employed men during the past summer in locating some 1,500 acres of mining claims in the Platoro district. The Miser and Guadaloupe group operated until the untimely and regrettable passing away of Mr. Karl Schuyler caused a cessation of work on these properties. It is said, however, that the coming year will see a resumption of work on these mines. A number of prospectors have been engaged during the past summer in the Jasper, Stunner and Platoro districts.

Approximately 200 miners, mill men and leasers are employed in this county.

DISTRICT NO. 4 by John F. Clougher

The increased interest exhibited by capital in metal mining in the general San Juan District for the year nearing a close has presented the brightest picture in the business operations in this state. Such upsurge of activities is strikingly important, in view of the inactivity of the big tonnage base metal mines for which this district is noted, which, due to the prevailing low level of prices for lead and zinc, made operations in many instances prohibitive. However, new exploration, development and production in this widespread mineralized section has demonstrated the broad beneficial effect attainable from a continuance of the present interest and progress in the basic industry to which the states of the west are deeply indebted for foundations.

A summary of activities throughout this district is as follows:

Archuleta County—Operations consisted of minor scale developments on two separate groups of claims by the owners thereof, and prospecting by ten men at different points in said county.

Dolores County—Activities this year consisted of the operation of six lode mines and several small-scale placer operations by individuals on the banks of the Dolores River. The Pro Patria mine ranked highest in the number of men employed and in ore production.

Gunnison County—Fourteen lode mines were in active operation during the present year. Besides such major activities there were several small-scale operations by individual owners of claims and quite a number of men engaged in minor-scale placer operations at different points on the banks of the Taylor River. Milling operations were conducted by the Carter Mines Co. and the Roosevelt Gold Mines Co.

Hinsdale County—Six lode mines were in active operation during the present year and minor-scale operations were conducted by several owners of groups of claims and by lessees.

La Plata County—Major operations were conducted on eighteen lode mines and two placer mines during this year. In addition to such activities, there were numerous minor-scale operations by owners of lode and placer claims and by lessees. Milling operations were conducted by the May Day Milling Company and the La Plata Mines Company.

Montezuma County—Seven lode mines have been in active operation during the year and several minor-scale placer operations at different points on the banks of the East Mancos River. Also quite a number of prospectors were engaged in exploring and staking claims in the mineralized areas. Milling operations were conducted by the Hesperus Mining Company.

Montrose County—Activities this year have been chiefly confined to the erection and repair of buildings, which improvements are preparatory for the mining and treatment of carnotite ore on a large scale basis, which operations are scheduled to commence in the early part of 1935.

Ouray County—Eleven lode mines were in active operation during the present year, with the Camp Bird Lease, Inc., leading in the number of men employed and in ore production. Milling operations were conducted by the Camp Bird Lease, Inc., and the Banner American Mining Company.

Saguache County—In the northwestern part of this county which is embraced by the San Juan District two lode mines were in operation during the summer months of this year.

San Juan County—Active operations were conducted on sixteen lode mines during this year, with the Shenandoah-Dives mine leading all others in the number of men employed and in mining and milling, said property having maintained an ore production and treatment of 600 tons daily throughout the year.

San Miguel County—Fifteen lode mines, one major-scale placer mine, one carnotite ore mine and several minor-scale placer operations at different points on the banks of the San Miguel River were in operation during this year. Also milling operations were conducted by the San Juan Metals Company and the Telluride Mining & Milling Company.

Improvements Made, Mine and Mill Machinery and Equipment Provided on mining properties throughout this district during 1934 are as follows: A new boarding house and a new office building at the Gold Cup mine, and a compressor house and air plant at the Raymond mine in Gunnison county. A new concentration and flotation mill in course of erection at the Fanny Fern mine in Hinsdale county. Several new buildings and delivery on the ground of mine and mill machinery at the Neglected mine, new mine machinery at the May Day mine, new buildings and air compressor plant at the Lucky Moon mine, new boarding house at the Kaibab mine, new air compressor and house at the Bessie G. mine, and an air compressor at the Lucky Strike mine, which properties are situate in La Plata county. Several new buildings at the Doyle mine and three new buildings at the Red Arrow mine in Montezuma county. New erection and reconstruction of several buildings in the carnotite ore fields in Montrose county. Two new buildings and mine machinery at the Laura Dunsmore mine and a new boarding house at the Camp Bird mine in Ouray county. Two new buildings and an air compressor plant at the Alethea mine and two new buildings at the Maybell mine in San Juan county. Three new buildings, mine machinery and equipment and an aerial tramway at the Favorite mine—a new mine tram terminal at the Smuggler-Union mine—several new buildings, mill machinery and equipment at the North Continent Mines, Inc., carnotite ore property, and a new boarding house, a new mill building and mill machinery at the Last Dollar mine in San Miguel county.

Metal mining has always contributed greatly to the maintenance of most all other lines of business and, as evidenced during the present period of stress, the industry has forged ahead, providing employment for men, markets for foodstuffs, building materials, machinery, explosives and utility services. No other lines of endeavor will aid as much in a restoration of normal conditions as more interest and assistance in and for the mining industry on which the west was founded.

HISTORICAL NOTE

The Bureau of Mines of the State of Colorado was established by an act of the Tenth General Assembly, approved March 30, 1895. This act repealed a previous act creating an ''Inspector of Metalliferous Mines,'' which was passed in 1889. The Bureau of Mines law established the office of Commissioner of Mines, provided for in the State Constitution, and charged him, among other things, with the supervision of metal mine inspection and the enforcement of laws relating to safety and health in metal mines. Subsequently this was broadened to include ''any ore mill, sampling works, smelter, metallurgical plant, rock quarry, clay pit, railroad tunnel, rock excavation or mine of whatsoever kind or character, except coal mines.'' The Commissioner of Mines was also charged, ''as he has opportunity and means,'' to collect mineral specimens and exhibit the same, to collect books relating to mining and geology, to collect and preserve data regarding mining methods, mining costs, milling, metallurgy, geology, mineral deposits of all kinds, and so on. Aside from the purchase of the Elsner collection of minerals, very little ''opportunity and means'' has been granted to the Commissioners for anything except inspection work. The present activities of the Bureau of Mines are treated elsewhere in this report.

COMMISSIONERS OF MINES

Harry A. Lee	May 11, 1895-May 10, 1903
E. L. White	May 10, 1903-May 10, 1907
T. J. Dalzell	May 10, 1907-May 10, 1911
T. R. Henahen	May 10, 1911-May 10, 1915
Fred Carroll	May 10, 1915-June 1, 1919
Horace F. Lunt	June 1, 1919-June 1, 1923
John T. Joyce	June 1, 1923-June 1, 1927
John T. Joyce	June 1, 1927-June 1, 1931
John T. Joyce	June 1, 1931-June 1, 1935
John T. Joyce	June 1, 1935-

PUBLICATIONS OF THE BUREAU OF MINES

BULLETINS

Bulletin No. 1, Recommendations for Safety Appliance in Mining, Harry A. Lee, Commissioner of Mines, 1896.

Bulletin No. 2, Precious Metal Production for the year 1898, Harry A. Lee, Commissioner of Mines, 1899.

Bulletin No. 3, Mining Laws, Relative to Bureau of Mines Precious Metal Production, Harry A. Lee, Commissioner of Mines, 1899.

Bulletin No. 4, Precious Metal Production, Harry A. Lee, Commissioner of Mines, 1901.

Bulletin No. 5, Precious Metal Production, Harry A. Lee, Commissioner of Mines, 1902.

Bulletin No. 6, Regulations Relative to the Construction, Equipment and Operation of Metalliferous Mines, Mills and Metallurgical Plants, Recommendations and Mineral Production for 1905, E. L. White, Commissioner of Mines, 1906.

Bulletin No. 7, Federal and State Laws Relating to Mining, Fred Carroll, Commissioner of Mines, 1916.

Supplement to Bulletin No. 7, Mining Laws Enacted by the Twenty-first General Assembly, Fred Carroll, Commissioner of Mines, 1917.

Supplement No. 2 to Bulletin No. 7, Amendments to the Mining Laws Enacted by the Twenty-second General Assembly, Horace F. Lunt, Commissioner of Mines, 1919.

Supplement No. 3 to Bulletin No. 7, Amendments to Laws Relating to Mining Enacted by the Twenty-third General Assembly, Horace F. Lunt, Commissioner of Mines, 1921.

Supplement No. 4 to Bulletin No. 7, Amendments to Laws Relating to Mining Enacted by the Twenty-fourth General Assembly, Horace F. Lunt, Commissioner of Mines, 1923.

Bulletin No. 8, The Oil Shales of Northwestern Colorado, Horace F. Lunt, Commissioner of Mines, 1919.

Bulletin No. 9, Mine Safety Standards, Horace F. Lunt, Commissioner of Mines, 1920. Out of print, now embraced in Bulletin No. 11.

Bulletin No. 11, Federal and State Laws Relating to Mining, John T. Joyce, Commissioner of Mines, 1931.

REPORTS

Report of Bureau of Mines, Colorado, from its establishment in May, 1895, to November 30, 1896, Harry A. Lee, Commissioner of Mines, 1896.

Report for the Year 1897, Harry A. Lee, Commissioner of Mines, 1898.

Report for the Year 1898, Harry A. Lee, Commissioner of Mines, 1899.

Biennial Report for the Years 1899-1900, Harry A. Lee, Commissioner of Mines, 1900.

Biennial Report for the Years 1901-1902, Harry A. Lee, Commissioner of Mines, 1903.

Biennial Report for the Years 1903-1904, E. L. White, Commissioner of Mines, 1905.

Biennial Report for the Years 1905-1906, E. L. White, Commissioner of Mines, 1907.

Biennial Report for the Years 1907-1908, T. J. Dalzell, Commissioner of Mines, 1909.

Biennial Report for the Years 1909-1910, T. J. Dalzell, Commissioner of Mines, 1911.

Biennial Report for the Years 1911-1912, T. R. Henahen, Commissioner of Mines, 1913.

Biennial Report for the Years 1913-1914, T. R. Henahen, Commissioner of Mines, 1914.

Biennial Report for the Years 1915-1916, Fred Carroll, Commissioner of Mines, 1916.

Biennial Report for the Years 1917-1918, Fred Carroll, Commissioner of Mines, 1919.

Annual Report for the Year 1919, Horace F. Lunt, Commissioner of Mines, 1920.

Annual Report for the Year 1920, Horace F. Lunt, Commissioner of Mines, 1921.

Annual Report for the Year 1921, Horace F. Lunt, Commissioner of Mines, 1922.

Annual Report for the Year 1922, Horace F. Lunt, Commissioner of Mines, 1923.

Annual Report for the Year 1923, John T. Joyce, Commissioner of Mines, 1924.

Annual Report for the Year 1924, John T. Joyce, Commissioner of Mines, 1925.

Annual Report for the Year 1925 was fully prepared but because of lack of funds was not printed. The manuscript is on file in the office of the State Bureau of Mines.

Annual Report for the Year 1926, John T. Joyce, Commissioner of Mines, 1927.

Annual Report for the Year 1927, John T. Joyce, Commissioner of Mines, 1928.

Annual Report for the Year 1928, John T. Joyce, Commissioner of Mines, 1929.

Annual Report for the Year 1929, John T. Joyce, Commissioner of Mines, 1930.

Annual Report for the Year 1930, John T. Joyce, Commissioner of Mines, 1931.

Annual Report for the Year 1931, John T. Joyce, Commissioner of Mines, 1932.

Annual Report for the year 1932, John T. Joyce, Commissioner of Mines, 1933.

Annual Report for the Year 1933, John T. Joyce, Commissioner of Mines, 1934.

At the time this report goes to press, there are available for distribution copies of the Annual Reports for 1921, 1922, 1926, 1928 and 1932. The 1929, 1930, 1931 and 1933 Annual Reports are out of print. The price of Bulletin 11, ''Mining Laws of Colorado,'' is 50 cents; all other available publications are free. The publications not mentioned in this paragraph are exhausted, but copies may be consulted in many of the public, state and college libraries throughout the country.

Note—The Colorado Geological Survey has published a number of geological reports and maps, a list of which may be obtained from the head of the Geology Department of the University of Colorado, Boulder, Colorado.

THE VALUE OF STATE INSPECTION IN LESSENING MINE ACCIDENTS

Colorado had the highest average in mine accidents of all the states in the Union for the years 1931 and 1932. A deplorable record due largely to carelessness that should and could be overcome by constant alertness on the part of the management and employees themselves by a strict observance of our standards of safety laws and departmental regulations. I wish to emphatically impress upon both the operators and employees the importance of taking every possible precaution to reduce accidents to the lowest minimum by giving more attention to and less disregard of the orders and recommendations of this department and thereby not only making a material saving for operators but also a great saving to this state.

With that thought in mind I am again reproducing my article on this subject from my report for 1930.

''Life is the most precious of all man's possessions and the utmost effort on the part of the state, industry, and the individual is justified in the conservation of the lives and unimpaired well-being of the worker. The state of Colorado in 1908 recognized its responsibility for the safety of the mine worker by the enactment of statutes covering the establishment of a department to be known as the Bureau of Mines of the State of Colorado with a commissioner and inspectors and delegating to this department as one of its principal duties the examination of mines, mills, and quarries, as to safety and health conditions. The department has the power to order corrected, under penalty of heavy fine, dangerous conditions found.

''By legislative act of 1911 the state was divided into four inspection districts for the purpose of rigid enforcement of accident prevention laws. The law is mandatory in the requirement of the appointment of a mine inspector for each of the said districts, whose principal duty is to see that each mine is operated in conformity with the standards of safety, the laws of the state, and departmental regulations for the protection of life, limb, and health of employees. The inspectors are to devote their entire time to their duty, and by vigorous inspection most satisfactory results have been obtained as may be seen by consulting the summary at the end of this article which shows that at the time the act was passed in every 100 shifts worked in and about the mines of the state a ratio of 2.22 men were killed. That has gradually been reduced in every eight-year period to the present year, which shows that the fatalities are now reduced to a ratio of only .92 in every 100 shifts.

''The Colorado Bureau of Mines, therefore, is vitally interested in the lessening of accidents in mines. Its inspectors examine into safety conditions at mines, mills, smelters, and quarries and make a diligent investigation of fatal and serious accidents and advise where possible means of preventing a repetition of such accidents. Reports on all mine, mill, smelter, and quarry accidents which are furnished by the operators to the State Industrial Commission are studied and compiled for publication in the annual report of this department. There were recently compiled in this department statistics on all metal mine accidents in Colorado for the past three eight-year periods, beginning with the year 1906 up to 1930 inclusive, and the past four years of the present period the summary of which is appended.

"These figures demonstrate that the lessening of accidents in Colorado metal mines as in those of other states requires continued united effort on the part of mine operators and miners and continued inspection and guidance by an adequate force of state mine inspectors.

"The value of state inspection in lessening mine accidents is difficult to enumerate in units only of dollars and cents and has a value to the industry and the public far greater than can be measured on a direct cost basis. We cannot usually say in any particular mine that a certain number of lives have been saved by the righting of recognized dangerous conditions or by safer equipment and practices, but we do know that taking the state or country as a whole dangerous conditions, unsafe equipment, and unsafe practices in mines will each year take its toll of life and suffering and that the righting of such conditions and practices will inevitably save life. We know at the end of each year how many lives have been lost in our mines but we cannot definitely say how many lives have been saved by inspection service; that many lives are thus saved is self-evident, which is borne out by the figures mentioned. State inspection service results not only in the correction of dangerous conditions and practices but it also spurs the mine operator to increased thought and effort toward safety and the miner to increased carefulness. Both miner and operator are reminded by these inspectors that the state has a very definite interest in both the personal security of the miner and the continued successful operation of the mine. Also, the inspector through his visits to numerous mines and through information collected by the department is able to suggest numerous measures which make toward safer and more economical mine operation.

"Summarizing, a state mine inspection department is of very definite value in reducing accidents, promoting the safety and welfare of miner and operator, and in assisting in the successful operation of mines. A state mine inspection department can only operate with proper efficiency and success in reducing accidents if it has an adequate number of inspectors furnished with funds adequate for regular inspections and if it has the cordial and hearty support of the mine operator, the miner, and the public. The Colorado State Bureau of Mines pledges its continued effort toward the reduction of mine accidents and believes that in this most important work it will have, as it has always had from the Colorado mine operators, continued and even more hearty support from that highly important factor in the prosperity of our state.''

SUMMARY

Three 8-year periods on the basis of 100,000 shifts.

From 1906 to 1914, inc., 23,100,000 shifts were worked, 511 men were killed, ratio per 100,000 shifts............................ 2.22

From 1915 to 1922, inc., 25,468,000 shifts were worked, 342 men were killed, ratio per 100,000 shifts............................ 1.35

From 1923 to 1930, inc., 16,148,154 shifts were worked, 167 men were killed, ratio per 100,000 shifts............................ 1.00

From 1931 to 1934, inc., 5,606,284 shifts were worked, 52 men were killed, ratio per 100,000 shifts.................................. 0.92

Acknowledgment:

Thanks are due to Mr. E. H. Denny of the U. S. Bureau of Mines for his valued suggestions and hearty cooperation with this department in matters concerning the safety of employees in and about metal mines.

FATAL ACCIDENTS

Underground

January 6, Rudolph Nelson, of Redcliff, age 25, unmarried, timberman, employed by the Empire Zinc Company on the Eagle mine in Eagle county, was crushed to death by ground caving from the back. Unavoidable accident.

February 8, Antonia Lavato, of Silverton, age 41, unmarried, timbering contractor, employed by the Shenandoah-Dives Mining Company, San Juan county, fell down a skipway and died shortly after. He rode a small skip, in spite of warnings, which was installed for transporting supplies and, while trying to pull the cable, lost hold and fell down skipway. Carelessness of injured.

March 13, G. L. Davis, of Idaho Springs, age 40, married, machineman, employed by the Alma Lincoln Mining Company on the Lincoln mine in Clear Creek county, was killed by fall of rock from hanging wall in stope. Carelessness of injured.

March 30, John W. Lasky, of Idaho Springs, age 32, married, machineman, was killed by fall of rock from hanging wall. Unavoidable accident.

April 1, William Warren, of Climax, age 24, unmarried, assistant chute loader, employed by the Climax Molybdenum Company, Lake county, was fatally injured when an extraordinarily heavy blast charged with ninety sticks of powder blew some object against him. Violation of safety rules.

May 20, B. L. Clarke, of Denver, age 53, unmarried, timberman, employed by the Summit Mines Company, Park county, was killed by fall of rock which caused him to fall 100 feet down chute. Carelessness of injured.

June 5, Paul Schmidt, of Leadville, age 60, unmarried, miner, leasing on the Ball Mountain Tunnel, Lake county, had drilled six holes in the breast of the tunnel and had completed lighting all the fuses and had started away when the cut holes exploded. He was killed by the blast. Evidently carelessness of injured.

August 12, Wilmer F. Bixeman, of Climax, age 27, married, brakeman, employed by the Climax Molybdenum Company, Lake county, was killed instantly when his head was crushed between a car and a gravel bin. Carelessness of injured.

September 9, James Bowden, of Victor, age 42, married, lessee, machineman, employed by the United Gold Mines Company, on the Portland No. 3 mine in Teller county, was killed by falling rock. Unavoidable accident.

September 25, Carl K. Richardson, of Ridgway, age 40, married, single jack driller, employed by the U. S. Mines of Colorado, Incorporated, San Miguel county, at the Favorite Mine, died from asphyxiation by bad air after he had been warned not to go into a tunnel beyond the point of fresh air. Carelessness of injured.

October 4, W. C. Acton, of Breckenridge, age 70, unmarried, lessee, employed by the Monitor Mining Corporation on the Peacock tunnel in Summit county, was killed instantly by falling rock. Carelessness of injured.

October 19, James Clark, of Ward, age 59, married, miner, employed by the Big Five Gold Mining Company in Boulder county, fell down an incline chute 100 feet, causing injuries from which he died October 20.

November 30, Elmer Hobert, of Cripple Creek, age 38, married, machine runner, employed by the Stratton Cripple Creek Mining and Development Company on the Western Mining and Leasing Company's lease of the American Eagle mine in Teller county, was killed instantly by falling rock. Carelessness of injured.

Shaft

April 6, Percy Thompson, of Cripple Creek, age 35, married, shaft topman, employed by the Colorado International Mining Corporation on the Ajax mine, Teller county, while reaching with stick to close safety door at collar of shaft on 2,000-foot level slipped and fell down shaft and was killed instantly. Lack of safety devices.

July 21, Thomas Simmons, of Rosita, age 28, unmarried, miner, employed on the Jumper claim two and one-half miles south of Querida in Custer county, was killed by an explosion in the shaft. There had been several missed holes on account of damp fuse and Mr. Simmons suggested that the holes be fired by electric current. On the day of the accident preparations were made for electric firing. Due to lack of experience or proper equipment a premature circuit was made causing the explosion that resulted in Mr. Simmons' death.

Surface

March 25, John Daniels, of Boulder, age 57, married, mine foreman, employed by the Slide Mines, Incorporated, Boulder county, fell 13 feet from a trestle, striking his head on a rock, and was killed instantly. Carelessness of injured.

Placer

July 9, Floyd W. Henderson, of Denver, age 44, married, lessee on the Alma Placer, Park county, was killed instantly when a bank of gravel caved. Carelessness of injured.

Rock Excavation and Water Tunnel

June 26, Joseph W. Rhoades, of Colorado Springs, age 25, married, road worker, employed by F. E. R. A. Project No. 22 B. 1-2, was killed by flying rock. Four holes had been drilled. All holes are fired under a mat to keep the road clear of debris, but the mat would not cover the four holes. While the mat was being placed to fire the second hole the original charge in the first hole exploded, and it was the rock from this charge that killed Mr. Rhoades. Unavoidable accident.

August 1, Kenneth Yargus, of Pueblo, 25, unmarried, mucking machine operator, employed by Platt Rogers, Inc., on the Twin Takes Water Tunnel was operating a Sullivan Slushing Machine when a slack cable came out through a 3-inch space making a loop over Yargus' head. On the back lash the cable caught Yargus about the base of the skull and he died a few hours after the accident. Unavoidable accident.

August 15, Clarence Davis, of Pagosa Springs, age 35, unmarried, machineman, employed by E. H. Honnen Construction Company, Colorado, was killed instantly by missed shot. Carelessness of injured.

TABLE I

PRODUCTION OF THE PRINCIPAL METALS IN COLORADO IN 1933 AND 1934

County	GOLD				SILVER				COPPER				LEAD				ZINC				TOTAL VALUE		Increase or Decrease	County
	1933		1934		1933		1934		1933		1934		1933		1934		1933		1934		1933	1934		
	Fine Ounces	Value	Fine Ounces	Value	Fine Ounces	Value	Fine Ounces	Value	Pounds	Value	Pounds	Value	Pounds	Value	Pounds	Value	Pounds	Value	Pounds	Value	Value	Value	Value	County
Adams	4.69	$ 120	19.54	$ 683	....	....	2	$ 1	....	....	....	....	....	....	....	....	....	....	....	....	$ 120	$ 684	+ $ 564	Adams
Alamosa	....	....	4.35	152	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	152	+ 152	Alamosa
Arapahoe	1.84	47	59.57	2,082	....	....	2	1	....	....	....	....	....	....	....	....	....	....	....	....	47	2,083	+ 2,036	Arapahoe
Boulder	4,402.51	112,528	17,536.48	512,900	11,926	$ 4,174	57,171	36,959	4,000	$ 256	21,400	$ 1,712	26,000	$ 962	69,000	$ 2,553	....	....	....	....	117,920	554,124	+ 536,204	Boulder
Chaffee	369.10	9,434	1,597.94	55,848	1,872	655	7,886	5,098	300	19	2,700	216	16,000	592	80,000	2,960	....	....	....	....	10,700	54,122	+ 53,422	Chaffee
Clear Creek	5,512.77	140,906	11,901.23	415,948	28,205	9,872	97,444	62,994	11,000	704	77,500	6,200	141,000	5,217	455,000	16,835	....	....	....	....	156,699	501,977	+ 345,278	Clear Creek
Costilla	16.45	420	8.70	304	2	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	421	304	— 117	Costilla
Custer	2.61	67	19.14	669	....	....	4,571	2,955	....	....	1,300	104	....	....	23,000	851	....	....	....	....	67	4,579	+ 4,512	Custer
Delta	4.35	111	31.96	1,117	100	35	5	3	....	....	....	....	400	15	....	....	....	....	....	....	161	1,120	+ 959	Delta
Denver	19.59	501	124.29	4,344	6	2	4	3	....	....	....	....	....	....	....	....	....	....	....	....	503	4,347	+ 3,844	Denver
Dolores	39.52	1,010	351.56	12,287	4,820	1,587	49,302	31,872	800	51	19,800	1,584	6,000	222	239,000	8,843	....	....	214,000	$ 9,202	2,970	63,788	+ 60,818	Dolores
Douglas	23.90	611	104.26	3,644	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	611	3,644	+ 3,033	Douglas
Eagle	4,326.76	110,592	6,967.64	243,519	1,484,143	519,450	1,942,284	1,255,618	8,163,000	522,432	9,819,000	785,520	15,000	555	104,400	3,863	....	....	....	....	1,153,029	2,288,520	+ 1,135,491	Eagle
Elbert	10.79	276	9.90	346	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	276	346	+ 70	Elbert
Fremont	11.95	305	50.77	2,124	2	1	12	8	....	....	....	....	....	....	....	....	....	....	....	....	306	2,132	+ 1,826	Fremont
Garfield	1.55	40	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	40	....	— 40	Garfield
Gilpin	4,152.27	106,132	7,748.41	270,807	8,366	2,928	35,080	22,678	12,500	800	32,600	2,608	84,000	3,108	165,000	5,105	....	....	....	....	112,968	302,198	+ 189,230	Gilpin
Grand	....	....	11.59	405	....	....	427	276	....	....	....	....	....	....	....	....	....	....	....	....	....	681	+ 681	Grand
Gunnison	319.76	8,173	2,642.69	92,362	7,135	2,497	10,641	6,879	1,300	83	500	40	163,000	6,031	58,000	2,146	60,000	$ 2,520	33,000	1,419	19,304	102,846	+ 83,542	Gunnison
Hinsdale	....	....	.23	8	....	....	577	373	....	....	....	....	....	....	500	18	....	....	....	....	....	399	+ 399	Hinsdale
Huerfano	....	....	2.72	95	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	95	+ 95	Huerfano
Jackson	4.84	124	9.33	326	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	124	326	+ 202	Jackson
Jefferson	353.67	9,040	2,562.12	89,546	51	18	388	251	....	....	....	....	....	....	....	....	....	....	....	....	9,058	89,797	+ 80,739	Jefferson
Lake	10,727.20	274,187	15,173.19	530,303	35,989	12,596	86,738	56,073	15,000	960	90,400	7,232	1,010,000	37,370	1,049,500	38,832	2,492,000	104,664	1,029,000	44,247	429,777	675,687	+ 246,910	Lake
La Plata	1,954.64	49,951	2,537.11	88,672	14,760	5,166	16,748	10,827	200	13	....	....	9,700	359	7,900	292	....	....	....	....	55,499	99,791	+ 44,292	La Plata
Larimer	....	....	42.86	1,498	....	....	1,239	801	....	....	....	....	....	....	....	....	....	....	....	....	....	2,299	+ 2,299	Larimer
Las Animas	....	....	....	....	....	....	48	31	....	....	....	....	....	....	700	26	....	....	....	....	....	57	+ 57	Las Animas
Mesa	....	....	15.02	525	....	....	164	106	....	....	5,000	400	....	....	....	....	....	....	....	....	....	1,031	+ 1,031	Mesa
Mineral	....	....	55.00	1,922	....	....	479,890	310,232	....	....	....	....	....	....	175,900	6,545	....	....	....	....	....	318,699	+ 318,699	Mineral
Moffat	23.85	610	68.67	2,400	3	1	4	3	400	26	....	....	....	....	....	....	....	....	....	....	637	2,403	+ 1,766	Moffat
Montezuma	171.83	4,392	791.76	27,672	129	45	775	501	....	....	600	48	....	....	....	....	....	....	....	....	4,437	28,221	+ 23,784	Montezuma
Montrose	199.35	5,095	246.35	8,610	63	22	78	50	....	....	....	....	....	....	....	....	....	....	....	....	5,117	8,660	+ 3,543	Montrose
Ouray	9,255.25	236,564	8,159.17	285,163	53,323	18,663	109,853	71,016	161,500	10,336	211,700	16,936	280,400	10,375	431,000	15,947	....	....	....	....	275,938	389,062	+ 113,124	Ouray
Park	60,146.33	1,537,340	85,867.54	3,001,074	40,526	14,184	61,510	39,764	82,000	5,248	72,100	5,763	1,319,300	43,814	2,625,800	97,155	....	....	....	....	1,505,586	3,143,761	+ 1,538,175	Park
Pitkin	7.84	200	13.90	486	68,860	24,101	121,105	78,290	....	....	900	72	178,000	6,586	411,000	15,207	....	....	233,000	10,019	30,887	104,074	+ 73,187	Pitkin
Rio Grande	188.81	4,826	1,201.06	41,977	28	10	2,393	1,547	....	....	6,000	480	200	7	....	....	....	....	....	....	4,843	44,004	+ 39,161	Rio Grande
Routt	8.37	214	48.87	1,708	3	1	99	64	....	....	....	....	....	....	....	....	....	....	....	....	215	1,772	+ 1,557	Routt
Saguache	28.15	720	49.50	1,730	1,500	525	215	139	3,000	192	300	24	68,000	2,516	2,000	74	....	....	....	....	3,953	1,957	— 1,986	Saguache
San Juan	23,473.87	599,992	15,591.99	579,890	389,642	136,375	303,012	195,887	1,184,000	75,776	819,300	65,544	1,198,400	44,341	2,051,000	75,887	....	....	2,000	86	856,484	917,294	+ 60,810	San Juan
San Miguel	3,685.69	94,206	5,272.99	219,241	23,560	8,246	56,938	43,273	28,000	1,792	112,200	8,976	248,300	9,187	393,000	14,541	17,000	714	33 000	1,419	114,145	287,450	+ 173,305	San Miguel
Summit	3,509.22	89,695	8,063.92	281,834	3,420	1,197	6,500	4,202	....	....	700	56	39,300	1,454	92,300	3,415	....	....	....	....	92,347	289,507	+ 197,160	Summit
Teller	109,868.38	2,808,236	127,949.90	4,471,849	7,705	2,697	12,556	8,117	....	....	....	....	....	....	....	....	....	....	....	....	2,810,933	4,479,956	+ 1,669,033	Teller
Total	242,827.70	$6,206,676	324,923.32	$11,356,070	2,185,140	$ 765,149	3,475,661	$2,246,892	9,667,000	$618,688	11,294,000	$903,520	4,803,000	$177,711	8,435,000	$312,095	2,569,000	$107,898	1,544,000	$ 66,392	[2]$7,876,122	[1]$14,884,969		

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[1] Average value of metals: Gold, $34.95 per ounce; silver, $0.545+ per ounce; copper, $0.080 per pound; lead, $0.037 per pound; zinc, $0.043 per pound.

[2] Average value of metals: Gold, $25.56 per ounce; silver, $0.350 per ounce; copper, $0.064 per pound; lead, $0.037 per pound; zinc, $0.042 per pound.

TABLE II

DAYS OF EMPLOYMENT IN AND ABOUT MINES, MILLS AND SMELTERS AND NUMBER OF MEN KILLED AND INJURED PER 10,000 DAYS OF EMPLOYMENT DURING THE YEARS 1933 AND 1934

	Employment Days of		Killed				Serious Injury (Time Lost Over 14 Days)				Slight Injury (Time Lost Under 14 Days)			
	1933	1934	1933		1934		1933		1934		1933		1934	
			No. of Accidents	Rate Per 10,000 Days	No. of Accidents	Rate Per 10,000 Days	No. of Accidents	Rate Per 10,000 Days	No. of Accidents	Rate Per 10,000 Days	No. of Accidents	Rate Per 10,000 Days	No. of Accidents	Rate Per 10,000 Days
Underground	1,000,000	1,016,847	9	.09	15	.1475	163	1.63	235	2.311	254	2.540	516	5.074
Surface	300,000	381,889	2	.0666	1	.0261	48	1.600	50	1.3093	76	2.533	122	3.194
Mills	135,250	89,225	..	....	..	....	2	.1478	23	2.577	17	1.257	40	4.483
Smelters	70,750	84,666	..	....	..	....	3	.4239	5	.5905	2	.2826	..	....
Quarries	80,750	47,995	1	.1238	..	....	10	1.238	12	2.500	24	2.972	24	5.000
Placers	40,000	56,796	..	....	1	.1760	9	2.250	4	.7042	29	7.250	25	4.401

In 1934 there were two fatal accidents in rock excavation and one fatal accident in a water tunnel which cannot be properly classed as accidents in mine or mill.

TABLE III

CLASSIFICATION ACCORDING TO CAUSE OF ALL ACCIDENTS IN THE METAL MINING AND QUARRYING INDUSTRY IN THE STATE OF COLORADO DURING THE YEARS 1933 AND 1934

			Serious Injuries (Time lost over 14 days)						Slight Injuries (Time lost under 14 days)	
	Fatal		Permanent Total Disability		Permanent Partial Disability		Temporary Disability			
UNDERGROUND	1933	1934	1933	1934	1933	1934	1933	1934	1933	1934
1. Fall of rock or ore from roof or wall	3	7	..	..	2	..	27	45	47	96
2. Rock or ore while loading at working face	..	..	..	..	3	..	12	1	23	6
3. Hand tools	..	..	..	..	..	..	5	10	11	16
4. Explosives	..	2	..	..	2	1	2	11	2	5
5. Haulage	2	1	..	..	1	..	16	22	28	40
6. Falling down chute, winze, raise, or stope	1	2	..	..	..	1	15	24	15	18
7. Run of ore from chute or pocket	1	..	..	..	..	1	..	13	2	21
8. Drilling	..	..	..	..	1	2	15	19	32	86
9. Electricity	..	..	..	..	..	..	..	..	2	5
10. Machinery (other than locomotives or drills)	..	..	..	..	1	2	1	..	1	4
11. Mine fires	..	..	..	..	..	..	..	..	..	..
12. Suffocation from natural gases	..	1	..	..	..	1	..	1	..	..
13. Inrush of water	..	..	..	..	..	..	..	..	..	..
14. Stepping on nail	..	..	..	..	..	..	..	1	5	8
15a. Handling materials (other than rock or ore)	..	..	..	..	..	1	..	22	..	36
15b. Other causes	..	..	..	..	4	2	31	42	62	154
Total	7	13	..	..	14	11	124	211	230	495
SHAFT										
16. Falling down shaft	..	1	..	..	..	1	1	..	..	1
17. Objects falling down shaft	1	..	..	..	..	..	1	2	1	3
18. Breaking of cables	..	..	..	..	..	..	..	1	..	..
19. Overwinding	..	..	..	..	..	..	..	..	..	..
20. Cage, skip, or bucket	..	..	..	..	..	..	1	5	3	8
21. Other causes	1	1	..	..	2	3	20	1	20	9
Total	2	2	..	..	2	4	23	9	24	21

	SURFACE SHOPS AND PLANTS										
22.	Mine cars, mine locomotives, or aerial trams	..	..	..	..	1	..	3	6	12	13
23.	Railway cars and locomotives	..	..	..	..	..	..	..	..	..	1
24.	Run or fall of ore in or from ore bins	..	..	..	..	..	1	1	2	1	1
25.	Falls of persons	..	1	..	..	..	1	18	8	13	15
26.	Stepping on nail	..	..	..	..	..	..	1	1	3	1
27.	Hand tools	..	..	..	..	..	..	2	1	4	10
28.	Electricity	..	..	..	..	..	..	..	1	1	3
29.	Machinery	1	..	..	..	2	..	4	5	8	13
30a.	Handling materials	..	..	..	..	..	..	..	11	..	15
30b.	Other causes	1	..	..	..	1	..	15	13	34	50
	Total	2	1	..	..	4	2	44	48	76	122
	PLACER MINES—DREDGING										
1.	Machinery	..	..	..	..	..	..	4	1	2	2
2.	Electricity	..	..	..	..	..	..	..	1	2	1
3.	Boiler explosions or bursting of steam pipes	..	..	..	..	..	..	..	..	..	..
4.	Falls of persons	..	..	..	..	..	..	1	1	2	1
5.	Hand tools	..	..	..	..	..	..	1	..	8	..
6.	Other causes	..	1	..	..	1	..	2	1	15	21
	Total	..	1	..	..	1	..	8	4	29	25
	ORE DRESSING AND MILLING										
1.	Haulage system—										
	(a) Cars and motors	..	..	..	..	..	..	..	1	..	1
	(b) Mechanical conveyors	..	..	..	..	..	..	..	..	..	..
2.	Railway cars and locomotives	..	..	..	..	..	..	..	..	1	..
3.	Crushers, rolls or stamps	..	..	..	..	..	..	..	..	..	2
4.	Tables, jigs, etc.	..	..	..	..	..	..	..	..	..	..
5.	Other machinery	..	..	..	..	..	..	2	5	2	6
6.	Falls of persons	..	..	..	..	..	..	..	4	4	3
7.	Suffocation in ore bins	..	..	..	..	..	..	..	..	..	..
8.	Falling objects (rocks, timber, etc.)	..	..	..	..	..	..	..	..	1	2
9.	Cyanide or other poisoning	..	..	..	..	..	..	..	..	..	..
10.	Scalding (steam or water)	..	..	..	..	..	..	..	1	..	.
11.	Electricity	..	..	..	..	..	..	..	..	..	2
12.	Hand tools, axes, bars, etc.	..	..	..	..	..	..	..	1	1	4

CLASSIFICATION ACCORDING TO CAUSE OF ALL ACCIDENTS IN THE METAL MINING AND QUARRYING INDUSTRY IN THE STATE OF COLORADO DURING THE YEARS 1933 AND 1934—Continued

				Serious Injuries (Time lost over 14 days)						Slight Injuries (Time lost under 14 days)	
		Fatal		Permanent Total Disability		Permanent Partial Disability		Temporary Disability			
		1933	1934	1933	1934	1933	1934	1933	1934	1933	1934
13.	Nails, splinters, etc.	..	..	..	..	..	..	..	..	1	2
14.	Flying pieces of rock from sledging or crushing	..	..	..	..	..	..	..	..	1	..
15.	Other causes	..	..	..	..	..	..	..	11	6	18
	Total	..	..	..	..	..	..	2	23	17	40
	SMELTER										
16.	Haulage system—										
	(a) Cars and motors	..	..	..	..	..	..	..	..	..	..
	(b) Mechanical conveyors	..	..	..	..	..	..	..	..	..	..
	(c) Hand and animal	..	..	..	..	..	..	..	..	..	..
17.	Railway cars and locomotives	..	..	..	..	..	..	..	..	..	..
18.	Cranes	..	..	..	..	..	..	..	..	..	..
19.	Other machinery	..	..	..	..	..	..	..	..	..	..
20.	Falls of persons	..	..	..	..	..	..	1	..	..	..
21.	Suffocation in ore bins	..	..	..	..	..	..	..	..	..	..
22.	Flying or falling objects (rocks, timbers, etc.)	..	..	..	..	..	..	1	..	1	..
23.	Gas (burns or asphyxiation)	..	..	..	..	..	..	..	2	..	..
24.	Scalding (steam or water)	..	..	..	..	..	..	..	..	..	..
25.	Electricity	..	..	..	..	..	..	..	..	..	..
26.	Hand tools, axes, bars, etc.	..	..	..	..	..	..	..	..	..	..
27.	Nails, splinters, etc.	..	..	..	..	..	..	..	..	..	..
28.	Burns from matte, slag, or molten metal (pouring or spilling)	..	..	..	..	..	..	1	3	..	..
29.	Hot metal explosions	..	..	..	..	..	..	..	..	..	..
30.	Other causes	..	..	..	..	..	..	..	..	1	..
	Total	..	..	..	..	..	..	3	5	2	..

	AUXILIARY WORKS										
31.	Haulage systems	..	..	..	..	..	..	..	..	..	..
32.	Railway cars and locomotives	..	..	..	..	..	..	..	..	..	..
33.	Falls of persons	..	..	..	..	..	..	..	..	..	..
34.	Falling objects (rocks, timbers, etc.)	..	..	..	..	..	..	..	..	..	..
35.	Nails, splinters, etc	..	..	..	..	..	..	..	..	..	..
36.	Hand tools, axes, bars, etc	..	..	..	..	..	..	..	..	..	..
37.	Electricity	..	..	..	..	..	..	..	..	..	..
38.	Machinery	..	..	..	..	..	..	..	..	..	..
	IN AND ABOUT QUARRY										
1.	Falls or slides of rock or overburden	..	..	..	..	..	..	1	1	3	2
2.	Handling rock at face	..	..	..	..	..	..	1	3	..	3
3.	Timber or hand tools	..	..	..	..	..	..	1	..	..	2
4.	Explosives—										
	(a) Transportation	..	..	..	..	..	..	..	..	..	..
	(b) Charging	..	..	..	..	..	..	..	..	..	..
	(c) Drilling into old holes	..	..	..	..	..	..	..	..	..	..
	(d) Striking in loose rock	..	..	..	..	..	..	..	..	..	..
	(e) Thawing	..	..	..	..	..	..	..	..	..	..
	(f) Caps, detonators, etc	..	..	..	..	..	..	..	..	..	..
	(g) Unguarded shots	..	..	..	..	..	..	..	..	..	..
	(h) Returned too soon	..	..	..	..	..	..	..	..	..	..
	(i) Premature shot	..	..	..	..	..	..	1	..	..	..
	(j) Delayed blast	..	..	..	..	..	..	..	..	..	..
	(k) Miscellaneous	..	..	..	..	..	..	1	..	..	..
5.	Haulage—										
	(a) Hand and animal	..	..	..	..	..	..	..	..	5	..
	(b) Mechanical	..	..	..	..	..	..	1	1	..	..
6.	Falling into quarry from surface, benches, or face	..	..	..	..	..	..	..	1	..	2
7.	Falling from hoist, derricks, ladders, etc	..	..	..	..	..	..	..	..	1	..
8.	Drilling and channeling (by machinery or hand)	..	..	..	..	..	..	1	1	2	2
9.	Electricity (shock or burns)	..	..	..	..	..	..	..	..	1	..
10.	Machinery—										
	(a) Cables and attachments	..	..	..	..	..	..	..	..	..	..
	(b) Guys, masts, booms and attachments	..	..	..	..	..	..	..	..	..	..
	(c) Pumps and hoisting engines	..	..	..	..	..	..	..	..	..	..

CLASSIFICATION ACCORDING TO CAUSE OF ALL ACCIDENTS IN THE METAL MINING AND QUARRYING INDUSTRY IN THE STATE OF COLORADO DURING THE YEARS 1933 AND 1934—Continued

	Fatal		Serious Injuries (Time lost over 14 days) Permanent Total Disability		Serious Injuries (Time lost over 14 days) Permanent Partial Disability		Serious Injuries (Time lost over 14 days) Temporary Disability		Slight Injuries (Time lost under 14 days)	
	1933	1934	1933	1934	1933	1934	1933	1934	1933	1934
11. Flying objects	..	..	..	..	..	..	..	1	1	4
12. Nails, splinters, etc.	..	..	..	..	..	..	..	..	..	..
13. Boiler and air tank explosions	..	..	..	..	..	..	..	..	..	..
14. Falling objects	..	..	..	..	..	..	..	..	..	2
15. Burns	..	..	..	..	..	..	..	..	4	1
16. Other causes	1	..	..	..	..	..	3	4	7	6
Total	1	..	..	..	..	..	10	12	24	24
OUTSIDE WORKS										
17. Haulage—										
(a) Hand and animal	..	..	..	..	..	..	..	..	..	..
(b) Mechanical	..	..	..	..	..	..	..	..	..	..
18. Railway cars and locomotives	..	..	..	..	..	..	..	..	..	..
19. Crushers	..	..	..	..	..	..	..	..	..	..
20. Cranes, derricks, etc.	..	..	..	..	..	..	..	..	..	..
21. Other machinery	..	..	..	..	..	..	..	..	..	..
22. Falls of persons	..	..	..	..	..	..	..	..	..	..
23. Hand tools	..	..	..	..	..	..	..	..	..	..
24. Electricity	..	..	..	..	..	..	..	..	..	..
25. Nails, splinters, etc.	..	..	..	..	..	..	..	..	..	..
26. Flying pieces of rock from sledging or crushing	..	..	..	..	..	..	..	..	..	..
27. Flying or falling objects (rocks, timbers, etc.)	..	..	..	..	..	..	..	..	..	..
28. Handling rock at face	..	..	..	..	..	..	..	..	..	..
29. Burns	..	..	..	..	..	..	..	..	..	..
30. Other causes	..	..	..	..	..	..	..	..	..	..
Total	..	..	..	..	..	..	..	..	..	..

ROCK EXCAVATION AND WATER TUNNELS										
1. Falls or slides of rock or overburden	..	..	..	..	..	..	..	4	..	13
2. Explosives	..	1	..	..	..	..	..	1	..	3
3. Falls of persons	..	..	..	..	..	..	..	3	..	3
4. Drilling	..	..	..	..	..	..	..	5	..	12
5. Machinery	..	1	..	..	..	..	1	2	2	1
6. Other causes	1	1	..	..	..	..	7	13	12	36
Total	1	3	..	..	..	..	8	28	14	68

TABLE IV

CLASSIFICATION ACCORDING TO CAUSE AND OCCUPATION OF THE FATAL ACCIDENTS THAT OCCURRED IN THE METAL MINING AND QUARRYING INDUSTRY OF COLORADO IN THE YEARS 1933 AND 1934.

MINES

	Superintendents, Foremen and Engineers		Machine Men and Helpers		Miners		Loaders, Shovelers, Muckers and Trammers		Trackmen, Pipemen, Pumpmen and Compressormen		Cage Tenders and Station Cagers		Carpenters, Timbermen and Helpers		Electricians, Motormen and Helpers	
UNDERGROUND	1933	1934	1933	1934	1933	1934	1933	1934	1933	1934	1933	1934	1933	1934	1933	1934
1. Falls of rock or ore from roof or wall	..	..	..	4	1	1	1	..	..	..	..	..	1	2	..	..
2. Handling rock or ore	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
3. Timber or hand tools	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4. Explosives	..	..	..	..	..	1	..	1	..	..	..	..	..	..	1	1
5. Haulage	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
6. Persons falling down chute, winze, raise or stope	..	..	..	..	1	1	..	..	..	..	..	..	..	1	..	..
7. Run of ore from chute or pocket	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
8. Drilling (by machine or hand drills)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
9. Electricity	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
10. Machinery other than 5 or 8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
11. Mine fires	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
12. Suffocation from natural gases	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..
13. Inrush of water	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
14. Nails and splinters	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
15. Other causes	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	..	..	..	5	3	3	2	1	..	..	..	..	1	3	1	1
SHAFTS																
16. Falling down shaft	..	..	..	.	..	..	..	..	..	..	..	1	..	..	..	..
17. Objects falling down shaft	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..

18. Breaking of cables	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
19. Overwinding	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
20. Cage, skip or bucket	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
21. Other causes	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..
Totals	..	..	..	..	2	1	..	..	..	..	..	1	..	..	..	..

SURFACE ACCIDENTS

	Superintendents and Foremen		Engineers, Firemen and Hoistmen		Blacksmiths and Mechanics		Carpenters and Topmen		Electricians		Others	
	1933	1934	1933	1934	1933	1934	1933	1934	1933	1934	1933	1934
22. Haulage	..	..	..	..	..	..	..	..	..	..	..	..
23. Railway cars and locomotives	..	..	..	..	..	..	..	..	..	..	..	..
24. Run or fall of ore in or from ore bins	..	..	..	..	..	..	..	..	..	..	..	..
25. Falls of persons	..	1	..	..	..	..	..	..	..	..	..	..
26. Nails and splinters	..	..	..	..	..	..	..	..	..	..	..	..
27. Hand tools, axes, bars, etc.	..	..	..	..	..	..	..	..	..	..	..	..
28. Electricity	..	..	..	..	..	..	..	..	..	..	..	..
29. Machinery	..	..	..	..	..	..	..	..	..	..	1	..
30. Other causes	..	..	..	..	..	..	..	..	..	..	1	..
Totals	..	1	..	..	..	..	..	..	..	..	2	..

MILLS

	Superintendents and Foremen		Grinding Machinery Men and Millmen		Concentrator Men		Laborers		Carpenters Mechanics		Aerial Tram Men and Conveyor Men	
	1933	1934	1933	1934	1933	1934	1933	1934	1933	1934	1933	1934
1. Haulage system	..	..	..	..	..	..	..	..	..	..	..	..
2. Railway cars and locomotives	..	..	..	..	..	..	..	..	..	..	..	..
3. Crushers, rolls or stamps	..	..	..	..	..	..	..	..	..	..	..	..
4. Tables, jigs, etc.	..	..	..	..	..	..	..	..	..	..	..	..
5. Other machinery	..	..	..	..	..	..	..	..	..	..	..	..
6. Falls of persons	..	..	..	..	..	..	..	..	..	..	..	..
7. Suffocation in ore bins	..	..	..	..	..	..	..	..	..	..	..	..

CLASSIFICATION ACCORDING TO CAUSE AND OCCUPATION OF THE FATAL ACCIDENTS THAT OCCURRED IN THE METAL MINING AND QUARRYING INDUSTRY OF COLORADO IN THE YEARS 1933 AND 1934—Continued.

MILLS—Continued

	Superintendents and Foremen		Grinding Machinery Men and Millmen		Concentrator Men		Laborers		Carpenters Mechanics		Aerial Tram Men and Conveyor Men	
	1933	1934	1933	1934	1933	1934	1933	1934	1933	1934	1933	1934
8. Falling objects (rocks, timbers, etc.)	..	..	..	..	..	..	..	..	..	..	..	..
9. Cyanide or other poisoning	..	..	..	..	..	..	..	..	..	..	..	..
10. Scalding (steam or water)	..	..	..	..	..	..	..	..	..	..	..	..
11. Electricity	..	..	..	..	..	..	..	..	..	..	..	..
12. Hand tools, axes, bars, etc.	..	..	..	..	..	..	..	..	..	..	..	..
13. Nails, splinters, etc.	..	..	..	..	..	..	..	..	..	..	..	..
14. Flying pieces of rock from sledging or crushing	..	..	..	..	..	..	..	..	..	..	..	..
15. Other causes	..	..	..	..	..	..	..	..	..	..	..	..
Totals	..	..	..	..	..	..	..	..	..	..	..	..

SMELTERS

	Superintendents and Foremen		Laborers		Motormen and Switchmen		Feeders and Furnace Men and Charge Wheelers	
	1933	1934	1933	1934	1933	1934	1933	1934
1. Haulage system	..	..	..	..	..	..	..	..
2. Railway cars and locomotives	..	..	..	..	..	..	..	..
3. Cranes	..	..	..	..	..	..	..	..
4. Other machinery	..	..	..	..	..	..	..	..
5. Falls of persons	..	..	..	..	..	..	..	..
6. Suffocation in ore bins	..	..	..	..	..	..	..	..
7. Flying or falling objects	..	..	..	..	..	..	..	..
8. Gas (burns or asphyxiation)	..	..	..	..	..	..	..	..

9. Scalding (steam or water)	..	..	..	..	..	..	..	..
10. Electricity	..	..	..	..	..	..	..	..
11. Hand tools, axes, bars, etc.	..	..	..	..	..	..	..	..
12. Nails, splinters, etc.	..	..	..	..	..	..	..	..
13. Burns from matte, slag or molten metal (pouring or spilling)	..	..	..	..	..	..	..	..
14. Hot metal explosions	..	..	..	..	..	..	..	..
15. Other causes	..	..	..	..	..	..	..	..
Totals	..	..	..	..	..	..	..	..

QUARRIES, CLAY PITS AND OIL SHALE MINES

	Superintendents and Foremen		Teamsters		Drillmen		Laborers	
	1933	1934	1933	1934	1933	1934	1933	1934
1. Haulage	..	..	..	..	..	..	..	..
2. Machinery	..	..	..	..	..	..	..	..
3. Other Causes	..	..	..	..	..	..	1	..
Totals	..	..	..	..	..	..	1	..

PLACERS AND DREDGES

	Miners		Laborers		Dredgemen	
	1933	1934	1933	1934	1933	1934
1. Machinery	..	..	..	..	..	..
2. Electricity	..	..	..	..	..	..
3. Other causes	..	1	..	..	..	..
Totals	..	1	..	..	..	..

ROCK EXCAVATIONS

	Superintendents and Foremen		Laborers	
	1933	1934	1933	1934
1. Falls of persons	..	..	..	..
2. Machinery	..	1	..	..
3. Other causes	1	..	..	2
Totals	1	1	..	2

LIST OF OPERATING MINES IN VARIOUS COUNTIES IN COLORADO.

OPERATING MINES IN BOULDER COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
A. L. and M.	Ward	A. L. and M. Mining Company	1332 Oak St., Kansas City, Mo.	Gold, Silver (c)
Bell	Gold Hill	E. T. Telnide and Associates	Boulder, Salina Star Route	Gold, Silver
Belle	Boulder	A. W. Fitzgerald	Box 43, Boulder, Colo.	Gold, Silver
Belmont (a)	Boulder	J. W. Burrel	914 Pleasant St., Boulder	Gold, Silver
Big Five Tunnel (m)	Ward	Ward-Big Five Gold Mining Co.	616 Patterson Bldg., Denver, Colo.	Gold, Silver
Big Horn	Gold Hill	Karl Egle and Associates	1037 Maxwell St., Boulder	Gold, Silver
Black Bird (a)	Boulder	A. V. Dickson and W. S. Leonard	Gold Hill	Gold
Boulder Co. Group of Mines	Nederland	Tungsten Production Co., Inc.	900 Lincoln Place, Boulder	Gold, Silver, Lead
Cash (a)	Gold Hill	E. G. Meyring	Salina	Gold, Silver
Celestial (a)	Ward	G. C. Gibson	Ward	Gold, Silver (c)
Chingis Kahn (a)	Boulder	H. A. Baker and Dan Schnell	2530 4th St., Boulder	Gold, Silver
Clipper (a)	Boulder	Consolidated Engineering Co.	1301 Broadway, Boulder	Gold, Silver
Cold Springs (m)	Gold Hill	St. Joe Mining and Milling Co.	Albany Hotel, Boulder	Gold, Silver
Cold Spring (m)	Nederland	Wolf Tongue Mining Company	310 First National Bank Bldg., Boulder, Colo.	Tungsten
Colorado (a)	Gold Hill	Robert Sahse and Ernest Dillard	1838 9th St., Boulder	Gold, Silver (c)
Columbus	Gold Hill	R. A. Mann	1625 Pine St., Boulder	Gold, Silver
Copper King (a)	Gold Hill	Cobalt Gold Mining Company	Gold Hill	Gold, Silver, Copper, Cobalt (c)
Corning and Pleasant View (a)	Ward	Larson Mining & Milling Trust	Ward	Gold, Silver (c)
Croesus (a)	Boulder	A. A. Stapp	Salina Star Route, Boulder	Gold, Silver (c)
Croesus	Boulder	W. R. Hamilton	Boulder	Gold, Silver
Cross	Nederland	Cross Gold Mining	1319 Spruce St., Boulder	Gold, Silver
Cross No. 4	Nederland	Bethona Tungsten Mining Co.	Louisville, Colo.	Tungsten
Dime, Sunbeam	Magnolia	St. Joe Mining and Milling Co.	Boulder, Colo.	Gold, Silver
Dutch Park and Silver Point (a)	Nederland	Dutch Park Group Mines, Inc.	1052 Continental Bank Bldg., Chicago, Ill.	Gold, Silver
East Columbia (a)	Ward	Ward Big Five Gold Mining Co.	616 Patterson Bldg., Denver	Gold, Silver (c)
Eclipse (a)	Magnolia	Magnolia Consolidated Gold Mines Co.	1525 Market St., Denver	Gold, Silver (c)
Eureka (a))	Jamestown	The Eureka Mining Company	Boulder	Gold
Fairfax (a)	Gold Hill	Bill Saxon and Associates	321 Midland Savings Bldg., Denver	Gold, Silver
Fairmount (a)	Sugar Loaf	R. E. Hall and Associates	1827 Walnut St., Boulder	Tungsten
Fourth of July	Jamestown	John Hohland and Associates	Jamestown Star Route, Boulder	Gold
Franklin (a)	Sugar Loaf	Kate Floras and Associates	1848 Larimer St., Denver	Gold, Silver (c)
Gardner	Gold Hill	The McAnally Mining Co. (Lessee)	Boulder, Colo.	Gold, Silver
George Henry (a)	Gold Hill	American Development Syndicate	235 Empire Bldg., Denver	Gold, Silver
Gillaspie and Big John (a)	Gold Hill	Big John Gold Mining Co.	Gold Hill	Gold, Silver
Gladiator (a)	Jamestown	J. Brockage and Associates	1313 Pine St., Boulder	Gold, Silver
Gold Coin	Ward	R. J. and A. J. King	Palestine, Texas	Gold. Silver (c)

Golden Age, Longfellow, December (a)	Jamestown	Precious Metals, Inc.	220 Delaware Ave., Buffalo, N. Y.	Gold, Silver
Golden Cross (a)	Jamestown	Bushelt Mining Company	Jamestown Star Route, Boulder	Gold, Silver
Golden Crown (a)	Gold Hill	J. J. Peterson and Associates	920 University Ave., Boulder	Gold, Silver
Golden Queen	Ward	Walter Brothers	Ward	Gold, Silver
Goldsmith Maid (a)	Gold Hill	Equity Reduction Company	437 Broadway, Denver	Gold, Silver
Good Hope	Boulder	Good Hope Development Co.	1439 Larimer St., Denver	Gold, Silver (c)
Grand Republic	Boulder	St. Joe Mining and Milling Co.	Albany Hotel, Boulder	Gold, Silver
Gray Eagle (a)	Gold Hill	St. Joe Mining and Milling Co.	Albany Hotel, Boulder	Gold, Silver
Hereafter, Hempster	Magnolia	White Bros.	1622 18th St., Boulder	Gold, Silver
Horse Shoe (a)	Gold Hill	Moore Brothers	Gold Hill	Gold, Silver (c)
Idaho (a)	Ward	Lindstrom, Grant, Erickson	1120 9th St., Boulder	Gold, Silver
Independence (a)	Boulder	Binford Farrar	6th St. and Walnut, Boulder	Tungsten, Gold, Silver
Ingram (a)	Salina	Ingram Mining Co.	3663 Forest Park Blvd., St. Louis, Mo.	Gold, Silver
John Jay (m)	Jamestown	Associated Metal Mines Inc. Acme Mining and Milling Co.	634 Cooper Bldg., Denver	Gold, Silver
Kekionga (a)	Magnolia	Magnolia Consolidated Gold Mines Company	1525 Market St., Denver	Gold (c)
Keystone	Magnolia	Clifford A. Staley	Magnolia, Colo.	Gold, Silver
King Wilhelm	Jamestown	C. V. Simkins and Associates	Niwot	Gold
Last Chance (a)	Nederland	Charles Meyring and Associates	Salina Star Route, Boulder	Tungsten
Little Johnnie (m)	Boulder	McAnally Mining Co.	1114 Hunt Bldg., Tulsa, Okla.	Gold, Silver
Little Pittsburgh (a)	Boulder	Boulderado Mining Company	1919 13th St., Boulder	Gold, Silver
Logan	Boulder	Logan Metals Co.	305 First National Bank Bldg., Boulder	Gold, Silver
Lucky Star (m) (a)	Gold Hill	Hobart Auer	Boulderado Hotel, Boulder	Gold, Silver
McKnight	Gold Hill	Webb and Trimble	Crisman Via Boulder, Colo.	Gold, Silver
Mack (a)	Gold Hill	J. J. Brand	Longmont	Gold, Silver
Madeline (a)	Ward	Herbert Warner and Associates	328 New Federal Bldg., Denver	Gold, Silver (c)
Madredoro (a)	Ward	New Deal Mining Company	1648 Tremont St., Denver	Gold, Silver (c)
Mammoth (m)	Nederland	Henderson, McKenzie & Walsh	Nederland	Tungsten
Milan	Sugar Loaf	Milan Mining Company	Sugar Loaf	Gold, Silver
Milwaukee (a)	Ward	Big Four Gold Mining Co.	Route 4, Box 285, Longmont	Gold, Silver
Montezuma (a)	Sugar Loaf	Golden Spike Mining and Milling Co.	828 Symes Bldg., Denver	Gold, Silver
Mt. Pleasant	Jamestown	Jamestown Holding Company	Jamestown	Gold, Silver
Mountain Lion (a)	Magnolia	S. B. Alexander	P. O. Box 489, Boulder	Gold, Silver
N. R. A. (a)	Ward	Dalton, Lafferty, Lyle	Ward	Gold
Nancy Group (a)	Boulder	Metals Production Company	Citizens National Bank Bldg., Boulder	Gold, Silver (c)
Newmarket Mine	Ward	R. H. Williams	Box 136, Ward	Gold, Silver
New York	Nederland	L. S. Allnatt	Nederland, Colo.	Gold, Silver
Norway (a)	Eldora	Prosperity Gold Mines, Inc.	Box 516, Greeley	Gold, Silver (c)
One and Three Quarters (a)	Nederland	Wolf Tongue Mining Co.	Boulder	Tungsten

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(a) Operated for part of the year only. (c) No production reported in 1934. (m) Mill operated in connection with mine.

OPERATING MINES IN BOULDER COUNTY, 1934—Continued

Name of Mine	Location	Operator	P. O. Address	Character of Product
Paymaster (a)	Boulder	M. C. Morrison	2732 Mapleton Ave., Boulder	Gold, Silver, Tungsten
Peacock	Gold Hill	T. M. Strawhun	2111 Mapleton Ave., Boulder	Gold, Silver (c)
Philadelphia (a)	Nederland	G. W. Kent and Associates	Nederland	Tungsten
Pilot (a)	Boulder	Dewey Baldwin and H. N. Fuller	Boulder	Gold
Plow Boy (a)	Boulder	Dewey Smith	Jamestown Star Route, Boulder	Gold
Poorman	Boulder	J. G. Clark and E. F. Green	Box 296, Boulder	Gold, Silver
Prussian	Gold Hill	Chas. A. Wolcott (agent)	Boulder, Colo.	Gold, Silver
Rainbow	Gold Hill	L. J. Gallagher and Associates	Gold Hill	Gold, Silver (c)
Red Signe (a)	Boulder	Charles Flucken and Associates	1043 Lincoln St., Boulder	Gold, Silver
Rocky Mountain Mammoth	Boulder	L. C. Ruehle	Magnolia Star Route, Boulder	Gold, Silver
Saint Joe (a)	Gold Hill	St. Joe Mining and Milling Co.	Albany Hotel, Boulder	Gold, Silver (c)
Saint Louis (m)	Nederland	Cactus Exploration and Mining Corporation	507 Boston Bldg., Denver	Gold, Silver
Senator Hill (a)	Magnolia	A. C. Wollenweber and Joe Kuri	1809 16th St., Boulder	Gold, Silver
Shirley (a)	Eldora	J. B. Rowley	Eldora	Gold, Silver
Silver Queen Tunnel (a)	Gold Hill	Major Gold Mines Company	1310 East Colfax Ave., Denver	Gold, Silver (c)
Slide (m)	Gold Hill	Slide Mines Incorporated	E. & C. Bldg., Denver	Gold, Silver
Smuggler (m) (a)	Lyons	Smuggler Mining Company	3337 Larimer St., Denver	Gold
State National Lode (a)	Boulder	J. E. Byron and Associates	1240 Pearl St., Boulder	Gold
Sugar Loaf (a)	Boulder	H. M. Tenhaiff	Wall Street, Salina, Star Route, Boulder	Gold, Silver
Sweet Home (m) (a)	Nederland	Kraft and Altman	2507 9th St., Boulder	Gold, Silver
Tambourine (m)	Boulder	Equity Reduction Company	437 Broadway, Denver	Gold, Silver
Three Brothers (a)	Gold Hill	Cohn Seyler and Associates	Salina Star Route, Boulder	Gold, Silver
Thunderbolt (a)	Jamestown	Clint Tyler	Box 305, Boulder	Gold, Silver
United Mines (a)	Boulder	United Empire Gold Mines Co.	Citizens Nat'l Bank Bldg., Boulder	Gold, Silver
Vasco Group (m)	Nederland	Tungsten Production Company, Inc.	940 Tenth St., Boulder	Tungsten
Virginia (a)	Ward	Hugh B. Milyard and Associates	Ward	Gold, Silver (c)
Wano (m) (a)	Jamestown	Wano Milling and Power Co.	Midland Savings Bldg., Denver	Gold, Silver
Washburn (a)	Boulder	Charles C. Hagman and A. C. Leflang	1010 Marine St., Boulder	Gold, Silver
Weona	Gold Hill	Zella Walker Lease	3519 Federal Blvd., Denver	Gold, Silver
Who Do (a)	Gold Hill	Henry Denman and George R. Haggard	Gold Hill	Gold, Silver (c)
Wood Chuck (a)	Gold Hill	E. T. Peters and Associates	1317 17th St., Boulder	Gold, Silver
Wood Mountain (m)	Boulder	Tungsten Production Co., Inc.	900 Lincoln St., Boulder	Gold, Silver
Yellow Jacket (m) (a)	Sugar Loaf	C. H. Craig	1107 10th St., Boulder	Gold

OPERATING MINES IN CHAFFEE COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
Allie Belle	Romley	Allie Belle Mining and Milling Co.	1014 University Bldg, Denver	Gold, Silver, Lead, Zinc (c)
Allison-Laidley, Betty A. (a)	Turret	E. L. Allison and F. W. Laidley	Turret	Gold (c)
Florence Shaft (a)	Granite	James B. Wilson, H. K. Frey and Merle F. Frey	Granite	Gold (c)
Golden Queen Tunnel	Turret	Golden Queen Mining and Milling Co.	329 U. S. National Bank Bldg., Denver	Gold (c)
Granite Tunnel	Granite	H. and H. Mining Co.	% C. E. Hersey, Granite	Gold, Silver
Mary Murphy (a)	St. Elmo	Mary Murphy Gold Mining Co.	307 Boston Bldg., Denver	Gold, Silver, Lead
Mayflower Incline	Granite	Mayflower Mining Co.	Granite	Gold (c)
Monarch Madonna No. 6 Tunnel (a)	Monarch	Stanley Kuhn	Salida	Gold, Silver, Lead (c)

OPERATING MINES IN CLEAR CREEK COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
Alma Lincoln (Lower Levels)	Idaho Springs	Alma Lincoln Mining Company	Idaho Springs	Gold, Silver
Anoka Lease	Idaho Springs	Anoka Lease Mines Company	Idaho Springs	Gold, Silver
Atlantic and Rifle (m)	Empire	D. A. O'Dell and Associates	628 U. S. National Bank Bldg., Denver	Gold, Silver
Bard Creek (m) (a)	Empire	A. F. Mayham and Associates	Idaho Springs	Gold, Silver, Lead, Zinc
Belgian Hare (m) (a)	Idaho Springs	Wyatt Bros. and J. F. Fisher	Idaho Springs	Gold, Silver
Bellevue Hudson (a)	Lawson	R. L. Hower and Associates	Lawson	Gold, Silver (c)
Belman (a)	Idaho Springs	Engineers Mining Company	724 Cooper Bldg., Denver	Gold, Silver, Copper
Big Chief Tunnel (a)	Idaho Springs	Freres Development Company	Idaho Springs	Gold, Silver
Big Three (a)	Empire	Andrew Nelson and Sam Esbenson	Empire	Gold, Silver (c)
Bismark	Idaho Springs	Bismark Mines, Inc.	210 Tabor Bldg., Denver	Gold, Silver
Blooming Thistle	Empire	Sam C. Crawford and N. J. Ventis	1324 Ogden St., Denver	Gold, Silver
Bride (a)	Idaho Springs	Frank F. Wagner	830 Washington St., Denver	Gold, Silver, Lead
Brighton (a)	Idaho Springs	C. S. Hawn and Associates	Idaho Springs	Gold, Silver, Lead
Calvin (a)	Idaho Springs	P. G. Hanson and Horace Traynor	Idaho Springs	Gold, Silver, Lead
Capital Prize (a)	Georgetown	Capital Prize Mining Co., Inc.	519 Exchange Bank Bldg., Colorado Springs	Gold, Silver, Lead (c)
Central Tunnel, Belman & Fulton	Idaho Springs	North American Mining Company	405 Interstate Trust Bldg., Denver	Gold, Silver, Copper

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(a) Operated for part of the year only. (c) No production reported in 1934. (m) Mill operated in connection with mine.

OPERATING MINES IN CLEAR CREEK COUNTY, 1934—Continued

Name of Mine	Location	Operator	P. O. Address	Character of Product
Clear Creek and Gilpin Tunnel (m) (a)	Dumont	Corporation of America	Dumont	Gold, Silver, Copper
Clinton (a)	Empire	Black Prince Mining Company	323 Central Block, Pueblo	Gold, Silver (c)
Commonwealth Tunnel (m) (a)	Georgetown	Tom Diamond Mining Corporation	1760 South Broadway, Denver	Gold, Silver, Lead
Conqueror (m)	Empire	Viking Gold Mines Corporation	1441 Welton St., Denver	Gold, Silver
Cross	Silver Plume	Cross Tunnnel Mining Corporation	404 U. S. National Bank Bldg., Denver	Gold, Silver, Lead (c)
Denver Tunnel (a)	Georgetown	The Metals Tunnel Company	2555 W. 37th Ave., Denver	Silver, Gold (c)
Diamond Joe Group	Idaho Springs	American Eagle Gold Mining Co.	421 U. S. National Bank Bldg., Denver	Gold, Silver (c)
Dierks	Idaho Springs	Bruce Consolidated Mining Co.	718 17th St., Denver	Gold, Silver (c)
Donaldson (Wheatland) Champion	Trail or Freeland	W. B. Milliken	1050 Sherman, Denver	Gold, Silver
East Lake (a)	Idaho Springs	Quick-Pay Gold Mines, Inc.	H. L. Harris and Associates Gas and Elec. Bldg., Denver	Gold, Silver, Lead
Elliot Barber (m) (a)	Idaho Springs	Alma Lincoln Mining Company	718 17th St., Denver	Gold, Silver, Copper
Empire Tunnel	Empire	W. S. Insinger	Greeley	Gold, Silver
Everett (a)	Silver Plume	Royal Consolidated Mining Co.	706 Colorado Bldg., Denver	Gold, Silver, Lead (c)
Free Gold (a)	Idaho Springs	Earnest Bauer	Idaho Springs	Gold, Silver, Lead
Fulton (a)	Idaho Springs	Cornelius Smith and Associates	Idaho Springs	Gold, Silver
German (a)	Idaho Springs	German Mines, Inc.	1210 First National Bank Bldg., Denver	Gold, Silver
Glenella	Idaho Springs	Alfred Williams	1031 Lipan St., Denver	Gold, Silver
Gold Valley Tunnel (a)	Lawson	E. J. Cook and Associates	4181 Depew St., Denver	Gold, Silver (c)
Golden Calf (a)	Dumont	K. G. Nilsen and Wm. Erickson	1 No. LaSalle St., Chicago, Ill.	Gold, Silver, Lead
Golden Eagle (m)	Empire	Paul and Fred Mathews	Empire	Gold, Silver, Lead
Golden Edge (a)	Idaho Springs	Leeper Leasing Company	Brighton	Gold, Silver
Griffith	Georgetown	Georgetown Mining Co.	Georgetown	Gold, Silver, Lead, Zinc, Copper
High Five	Georgetown	Argentine Gold Mining Co.	Ferguson Bldg., Denver	Gold, Silver, Copper (c)
Howard Mine	Empire	George T. Kearns	1822 California St., Denver	Gold, Silver, Lead (c)
Hyland (a)	Idaho Springs	Agan Mining Company	Box 351, Idaho Springs	Gold, Silver (c)
Imperial Chief (a)	Empire	Imperial Chief Mining Co., Inc.	Box 524, Denver	Silver, Lead (c)
Kanawha (a)	Lawson	Ira E. Clapper	Lawson	Gold, Silver (c)
Lalla (m) (a)	Idaho Springs	W. G. Harper	Box 446, Idaho Springs	Gold

Lincoln (a)	Idaho Springs	Tarheel Mining Company	718 17th St., Denver	Gold, Silver, Copper, Lead
Lucky Strike (a)	Idaho Springs	B. C. Bukowski and Associates	Idaho Springs	Gold, Silver
McClelland Tunnel (a)	Idaho Springs	Montezuma Corporation	1 Williams St., New York, N. Y.	Gold, Silver, Lead
Mattie (m)	Idaho Springs	Mattie Consolidated Mining and Milling Company	909 Equitable Bldg., Denver	Gold, Silver, Lead (c)
Maude Monroe (a)	Idaho Springs	Spanish Barr Mining Company	Idaho Springs	Gold, Silver (c)
Minnie (a)	Idaho Springs	Charles M. Welch	3119 Federal Blvd., Denver	Gold, Silver
Mt. Kelso (a)	Georgetown	Mt. Kelso Consolidated Mining Co.	Georgetown	Gold, Silver, Lead
Neath	Empire	Gold Horn Mining Company	229 Midland Sav. Bldg., Denver	Gold, Silver, Lead
Ocean Queen (a)	Idaho Springs	H. E. Blanchard and Dr. R. C. Stewart	927 E. 11th St., Pueblo	Gold, Silver
Old Settler	Idaho Springs	Old Settler Leasing Company	℅ International Trust Co., Denver	Gold, Silver
P. T. Mine (m)	Idaho Springs	King Kong Mines, Inc.	210 Tabor Bldg., Denver	Gold, Silver
Payrock Dunkirk (a)	Silver Plume	Clyde Champion and Associates	194 So. Federal Blvd., Denver	Gold, Silver, Lead (c)
Princess of India	Lawson	Handicap Mining Company	301 U. S. National Bldg., Denver	Gold, Silver, Lead, Zinc, Copper
Pulaski	Griffith	Crown Point Gold Mining Company	Silver Plume	Gold, Silver
Puzzler	Dumont	Samuel C. Crawford	Berthoud Falls	Gold, Silver
Rainbow (a)	Idaho Springs	J. G. Schultheiss and Associates	3328 Hayward Pl., Denver	Gold, Silver (c)
Rifle Group	Empire	D. A. Odell	628 U. S. National Bank Bldg., Denver	Gold, Silver
San Juan (m) (a)	Idaho Springs	Carl C. and Clifford H. Beach	Idaho Springs	Gold, Silver
Santiago (a)	Georgetown	Santiago Metals Corporation	311 U. S. National Bank Bldg., Denver	Gold, Silver, Lead (c)
Shafter (a)	Idaho Springs	Shafter Mining Company	Idaho Springs	Gold, Silver (c)
Silver Queen (a)	Shawnee	J. F. Kimberly and J. L. Henritzz	Shawnee	Gold, Silver, Lead, Zinc
Specie Payment (a)	Idaho Springs	Specie Payment, Inc.	℅ Don Hall, 333 E. 16th Ave., Denver	Gold, Silver
Sweet Home (a)	Idaho Springs	W. E. and Virgil Salmon	Atlanta, Idaho	Gold, Silver
Tolland County Tunnel (a)	Idaho Springs	Aetna Leasing Corporation	Idaho Springs	Gold, Silver, Lead
Tropic (a)	Idaho Springs	Silver Quarter Mining Company	Box 685, Idaho Springs	Gold, Silver, Lead
Twin Lode (a)	Empire	Wm. Bergren and Associates	746 Equitable Bldg., Denver	Gold, Silver
Whale (a)	Idaho Springs	A. L. Foster and E. E. Carnahan	Idaho Springs	Gold, Silver
Willcox Tunnel (m) (a)	Georgetown	Waldorf Gold, Inc.	1015 U. S. National Bank Bldg., Denver	Gold, Silver (c)
Wilson (a)	Empire	A. C. Wilson—Zehr	Empire	Gold, Silver, Lead, Zinc (c)
Zeda and Weda (a)	Silver Plume	George Leece and Associates	Georgetown	Gold, Silver, Lead

(a) Operated for part of the year only. (c) No production reported in 1934. (m) Mill operated in connection with mine.

OPERATING MINES IN CUSTER COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
Akin Tunnel (m) (a)	Florence	Charles Akin, Sr.	Wetmore	Gold (c)
Bassick (a)	Querida	Querida Mines Incorporated	320 Thatcher Bldg., Pueblo	Gold
Cloverdale (m) (a)	Hillside	Cloverdale Mines Co., Inc.	Hillside	Gold
Comstock (a)	Querida	Womack and Company	916 East 2nd St., Joplin, Mo.	Gold, Silver (c)
Dixie (a)	Florence	Harry A. Smith and Louis Camerlo	Florence	Gold
Half Moon	Querida	Half Moon Mine	Rosita	Gold, Silver, Lead (c)
Jumper (a)	Querida	John J. Budzack	803 Jones Ave., Pueblo	Silver, Lead (c)
King of Carbonates (a)	Westcliffe	J. T. Stroehlke and H. R. Henning	Silver Cliff	Silver, Lead
Maine No. 2 (a)	Querida	Denver and Silver Cliff Development Company	Rosita	Silver, Lead
Passiflora (a)	Westcliffe	William Schellerberg, Sr., and Associates	Westcliffe	Silver, Lead
Staley Group (a)	Ophir Creek	Frank Staley	Wetmore	Gold (c)
Superior (a)	Ophir Creek	William Looney and Ralph Decker	Wetmore	Gold (c)
Terrible (m) (a)	Ilse	Earl Craig	Ilse Route, Canon City	Lead
Vulcan Tunnel	Querida	T. M. Howells	Star Route, Silver Cliff	Gold, Silver, Lead

OPERATING MINES IN DOLORES COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
Burns Group	Rico	Mines Leasing Syndicate	Rico, Colo.	Silver, Gold, Lead, Zinc, Copper
Pro Patria	Rico	Rico Enterprise Mining Company	Rico, Colo.	Gold, Silver, Lead, Zinc

OPERATING MINES IN DOUGLAS COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
Caldon Reef (a)	Littleton	Caldon Reef Mining and Milling Company	1628 Elm St., Denver	Gold

OPERATING MINES IN EAGLE COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
Ben Butler Tunnel	Belden Canon	Henry Martin and Company	Redcliff	Gold, Silver
Champion Incline	Battle Mountain	Battle Mountain Exploration Co.	Box 931, Leadville	Gold
Eagle	Gilman	Empire Zinc Company	Canon City	Gold, Silver, Lead, Zinc, Copper, Iron
El Capitan (a)	Taylor Mountain	El Capitan, Lease	Tennessee Pass	Gold (c)
Gold Park (a)	Redcliff	Wm. Johnson and Gus Ahlberg	630 West 3rd St., Leadville	Gold, Silver (c)
Poorman Tunnel (a)	Belden Canon	Walter A. Johnson and Associates	Redcliff	Gold, Silver
Star of the West (a)	Belden Canon	A. J. Clooney	Redcliff	Gold, Silver
Taylor Tunnel (a)	Belden Canon	Jessen, Price and Holden	Minturn	Gold
Tip Top Tunnel (a)	Belden Canon	A. J. Clooney	Redcliff	Gold, Silver
Whipsaw Tunnel	Belden Canon	Whipsaw Mining Company	Box 103, Minturn	Gold, Silver, Lead, Zinc, Copper

OPERATING MINES IN FREMONT COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
Horse Shoe (a)	Badger Gulch	J. A. Miller	Parkdale	Gold, (c)
Ida Colo (a)	Canon City	M. H. Speakman	El Rio Hotel, Canon City	Gold, (c)

OPERATING MINES IN GILPIN COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
Aetna (a)	Blackhawk	G. W. Logan and Mark Vranesic	509 Exchange Bldg., Denver	Gold, Silver (c)
Bates Hunter and Becker Bates (a)	Central City	Gregory Bates Mines Company	709 U. S. National Bank Bldg., Denver	Gold, Silver, Copper (c)
Beacon (a)	Rollinsville	Equinox Mining Company	Rollinsville	Gold, Silver, Lead (c)
Becky Sharp (a)	Russell Gulch	Becky Sharp Leasing Company	Idaho Springs	Gold, Silver, Lead, Copper
Blue Diamond (m) (a)	Blackhawk	Blue Diamond Mines Incorporated	1010 University Bldg., Denver	Gold, Silver, Lead
Bonanza	Central City	Justice Hill Mining Company	104 Broadway, Denver	Gold, Silver
Buckhorn (a)	Blackhawk	W. E. Gomer	Blackhawk	Gold, Silver, Lead
Bullion (a)	Blackhawk	A. R. Rhine and F. E. Timmerman	206 Patterson Bldg., Denver	Gold, Silver, Lead
Chain O' (m)	Central City	Central City Gold Mines Company Chain Syndicate	100 N. LaSalle St., Chicago 5 So. Wabash Ave., Chicago	Gold, Silver, Lead, Copper

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(a) Operated for part of the year only. (c) No production reported in 1934. (m) Mill operated in connection with mine.

OPERATING MINES IN GILPIN COUNTY, 1934—Continued

Name of Mine	Location	Operator	P. O. Address	Character of Product
Cora (a)	Blackhawk	B. A. Roche and H. A. White	Blackhawk	Gold, Silver, Lead (c)
Cow Boy Group (a)	Blackhawk	L. C. Cavnah and Associates	Blackhawk	Gold, Silver, Lead
Delmonico (a)	Central City	Delmonico Mine Operating Corp.	Russell Gulch	Gold, Silver, Lead (c)
Derigo (a)	Central City	Wilber S. Parfet	Central City	Gold, Silver (c)
Druid	Central City	Hughes, Parsons and Company	Central City	Gold, Silver
East Spavia	Russell Gulch	V. C. Herrin—Red Arrow Mines	Idaho Springs	Gold, Silver (c)
Essex	Central City	C. L. Patterson and Associates	Central City	Gold, Silver, Lead (c)
Federal (a)	Russell Gulch	Diamond K. Mining Corporation Hughes and Farris	Littleton, Arvada	Gold, Silver (c)
Five Duces (a)	Blackhawk	Wm. Cole and Associates	Idaho Springs	Gold, Silver
Florence (a)	Blackhawk	Florence Mining Company	Idaho Springs	Gold, Silver
Forfar	Russell Gulch	W. C. Rea	Empire	Gold, Silver (c)
Gettysburg	Russell Gulch	Franklin Mining Company	Russell Gulch	Gold, Silver
Gold Basin (a)	Rollinsville	J. S. Brown and Associates	424 E. 14th Place, Tulsa, Okla.	Gold, Silver (c)
Gold Rock	Russell Gulch	Gold Rock-Gilpin Mining Company	Russell Gulch	Gold, Silver
Gomer	Russell Gulch	Gomer Mines	Russell Gulch	Gold, Silver (c)
Graham (a)	Blackhawk	War Jack Mines Incorporated	1210 First National Bank Bldg., Denver	Gold, Silver (c)
Harsh Extension Lode (a)	Russell Gulch	Geo. V. Powers and A. J. McMann	Box 392, Idaho Springs	Gold, Silver, Lead (c)
Hi-Tension (a)	Blackhawk	B. R. Shaffler and Associates	Blackhawk	Gold, Silver
Holland (a)	Russell Gulch	Earl Wood and Associates	Central City	Gold, Silver
Indiana (a)	Central City	August Kroeger	Central City	Gold, Silver (c)
Iowa	Central City	Herbert A. Strasser	1010 So. Univ. Blvd., Denver	Gold, Silver
Iron (a)	Russell Gulch	Viola Mining and Development Co.	Russell Gulch	Gold, Silver
Jordan (m) (a)	Rollinsville	Jordan Mines Company	Rollinsville	Gold, Silver
Little Anna (a)	Rollinsville	The Little Anna Gold Mining Co.	Rollinsville	Gold, Silver
Lone Star	Rollinsville	Hodge and Flint	1530 Grant St., Denver	Gold, Silver (c)
McCallister (a)	Central City	G. W. Logan	509 Exchange Bldg., Denver	Gold, Silver
McGreer (a)	Blackhawk	J. J. Mining and Milling Company	Indian Hills, Colo.	Gold, Silver (c)
Macky	Blackhawk	Barber and Dryer	Blackhawk	Gold, Silver
Martin	Idaho Springs	Roy B. Perry	Idaho Springs, Colo.	Gold, Silver
Minnesota (a)	Central City	The La Vida Mining Company	517 Exchange Bldg., Denver	Gold, Silver
Newport and Providence (m) (a)	Rollinsville	Henry Josephson and V. R. Kloer	Rollinsville	Gold, Silver
No Name (a)	Rollinsville	Frank Doherty and Associates	Boulder	Gold, Silver (c)
Old Town (a)	Russell Gulch	Old Town Mines Incorporated	822 University Bldg., Denver	Gold, Silver (c)
Pay Off (a)	Evergreen	Gold Ridge Mining Company	Central City	Gold, Silver (c)
Pearl (a)	Blackhawk	J. E. Powell and Associates	1916 Lincoln St., Denver	Gold, Silver (c)
Perigo (m) (a)	Rollinsville	Perigo Mines Company	707 South Downing St., Denver	Gold, Silver
Perrin	Russell Gulch	Nirrep Mining Company	Idaho Springs	Gold, Silver

Pittsburgh Extension (a)	Central City	Gold King Mining Company	U. S. National Bank Bldg., Denver	Gold, Silver
Pittsburgh Group (m) (a)	Central City	Russell Gulch Mining Company	530 U. S. Nat'l Bank Bldg., Denver	Gold, Silver
Pine Comb (m)	Blackhawk	Hy-Gold Mining and Milling Co.	Blackhawk	Gold, Silver
Robert Fulton (a)	Russell Gulch	Steamboat Leasing Syndicate	301 U. S. Nat'l Bank Bldg., Denver	Gold, Silver (c)
Rochester (a)	Blackhawk	Apex Leasing and Development Co.	First National Bank Bldg., Denver	Gold, Silver
Saint Louis No. 2 (m)	Central City	Wilbur S. Parfet and Ken Everett	Central City	Gold, Silver
Saratoga, Wallace, Decatur, Gaston, Ebenezer	Idaho Springs	Saratoga G. M. Co.	Idaho Springs	Gold, Silver
Silver Dollar	Central City	Silver Dollar Mining Company	1806 Cheyenne Blvd., Colorado Springs	Gold, Silver
Snowden (a)	Blackhawk	Ernest Reynolds and Associates	Idaho Springs, Colo.	Gold, Silver
Tiger (a)	Rollinsville	Gilpin Tiger Mining Company	Sugar City	Gold, Silver (c)
Troublesome (a)	Central City	E. H. Blake and Associates	Blackhawk	Gold, Silver
War Dance (m)	Idaho Springs	War Dance Mines, Inc.	Idaho Springs	Gold, Silver, Lead
Weaver Group (a)	Central City	Gold Crown Mining Company	1619 Welton St., Denver	Gold, Silver (c)
We-Got-'em (a)	Blackhawk	A. P. Eccker and Associates	Blackhawk	Gold, Silver
West Notaway (a)	Central City	Ben Neeper and Associates	Idaho Springs	Gold, Silver
Widow Woman and American Girl	Russell Gulch	Five Duces Mining Company	Russell Gulch	Gold, Silver

OPERATING MINES IN GUNNISON COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
Carter (m)	Ohio City	Carter Mines Company	Ohio City	Gold, Silver, Lead
Fairview	Pitkin	Fairview-Cleopatra Mines, Inc.	% B. T. Poxson, Golden	Gold, Silver, Lead
Gold Cup	Almont	Republic Metal Mines Corp.	Almont	Gold, Silver, Lead (c)
Gold Monument Group (a)	Ohio	Gold Monument Mining Company	303 Colorado Bldg., Denver	Gold, Silver, Lead, Iron
Good Hope and Vulcan (a)	Iola	S. V. Clevenger, Lessee	Box 754, Gunnison	Gold, Silver, Copper Tellurides (c)
Lucky Strike (m)	Gunnison	Lucky Chance Mines, Inc.	27 Broadmoor Ave., Colorado Springs	Gold, Silver
Old Lot (a)	Iola	Economy Mining and Milling Co.	Delta	Gold, Silver, Lead, Copper
Raymond & Cyrus	Ohio	J. F. Robinson	Ohio	Gold, Silver, Lead, Iron, Zinc
Roosevelt (m)	Pitkin	Rosevelt Gold Mines Company	Pitkin	Gold, Silver, Copper
Victory	Gold Brick	Kendall D. Garff	Ohio City	Gold, Silver

(a) Operated for part of the year only. (c) No production reported in 1934. (m) Mill operated in connection with mine.

OPERATING MINES IN HINSDALE COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
General Sherman	Lake City	B. N. Ramsey, G. G. Ramsey & H. G. Ramsey (Partnership)	Lake City	Gold, Silver (c)
Gladiator	Lake City	B. N. Ramsey, G. G. Ramsey & H. G. Ramsey (Partnership)	Lake City	Gold, Silver (c)

OPERATING MINES IN LAKE COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
Amity	Leadville	H. & C. Corporation	613 Harrison Ave., Leadville	Gold, Silver
Ballard (a)	Breece Hill	Ballard Gold Corporation	405 Denver National Bank Bldg., Denver	Gold, Silver, Lead
Belle of Granite	Leadville	Burns Mines, Inc.	Salida	Gold, Silver
Big Six	Leadville	Cal-Col Gold Corporation	405 Denver National Bank Bldg., Denver	Gold, Silver
Breece (a)	Leadville	Cal-Col Gold Corporation	405 Denver National Bank Bldg., Denver	Gold, Silver (c)
Climax Molybdenum (m)	Climax	Climax Molybdenum Company	Climax	Molybdenum
Electric Tunnel (a)	Twin Lakes	John S. Delorey & Martin Brier	Twin Lakes	Gold (c)
Fanny Rawlings	Breece Hill	The Fanny Rawlings Lease	% John Cortellini, 329 W. 8th St., Leadville	Gold, Silver, Lead
Fortune Tunnel	Leadville	Fortune Gold Mining Company	222 Burns Bldg., Colorado Springs	Gold, Silver, Lead, Zinc
Golden Eagle	Leadville	John Cortellini	Leadville	Gold, Silver
Granite Tunnel (a)	Granite	H. and H. Mining Company	Granite	Gold
Hattie Jane (a)	Low Pass Creek	G. F. Wilson, A. O. Brown & Asso.	814 North High St., Eldorado, Kan.	Gold
Ibex (a)	Leadville	Ibex Mining Company	Leadville	Gold, Silver, Lead, Copper, Zinc, Iron
Lackawanna Belle	Leadville	Frank Miller	2312 Westnedge Ave., Kalamazoo, Mich.	Gold, Silver
Eureka, Saturday Night, Lillian Group	Leadville	R. D. McLeod	Leadville	Gold, Silver
Mt. Champion Ball Mill Cleanup	Leadville	C. M. Bowen	Leadville	Gold, Silver
New Monarch	Big Evans Gulch	Ogden Gold Mining Company	215 W. 6th St., Leadville	Gold, Silver, Lead, Iron

President	Breece Hill	Leonard & Schreiber	Leadville	Gold
Resurrection	Leadville	Zenda Leadville Mining Company	Box 916, Leadville	Gold, Silver, Lead
Valley	Evans Gulch	Valley Leasing Company	P. O. Box 266, Leadville	Gold, Silver, Lead
Venir Lease	Leadville	Venir Lease (Partnership)	329 W. 8th St., Leadville	Gold
Yak Tunnel (a)	Leadville	Zenda Leadville Mining Company	Leadville	Silver, Lead, Zinc (c)

OPERATING MINES IN LA PLATA COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
Bay City	Hesperus	Bay City Gold Mines, Inc.	Box 560, Durango	Gold, Silver, Copper (c)
Champion Gold, Inc.	Durango	Champion Gold, Inc.	215 C. A. Johnson Bldg., Denver	Gold, Silver
Gold King (m)	La Plata	La Plata Mines Company	La Plata	Gold, Silver, Lead Tellurides
Grizzly King	Needle Mt.	Decker, Norris & Robran	c/o J. B. Decker, Bayfield	Gold, Silver
Hazel Mine Group (m)	Durango	Amalgam Gold Mines, Inc.	Durango	Silver, Gold Telluride (c)
Idaho	Durango	La Plata Mountain Gold Mines, Inc.	Box 31, Durango	Gold, Silver (c)
Jumbo (a)	Hesperus	Golden West Developing Company	1405 W. T. Waggoner Bldg., Fort Worth, Texas	Gold, Silver (c)
Kaibab Group	Durango	La Plata Gold Placers, Inc.	Box 84, Durango	Gold, Silver (c)
Lady Eleanora (a)	Hesperus	Lady Eleanora Consolidated Gold Mines Company	Hesperus	Gold, Silver (c)
Lucky Moon	Hesperus	Lucky Discovery Gold, Inc.	Box 14, Durango	Gold, Silver
Lucky Strike Group (a)	Hesperus	Lucky Strike Mines J. A. Tiffany and Associates	Ignacio	Gold, Silver (c)
May Day (m)	Hesperus	May Day Milling Company, Lessee	Durango	Gold, Silver Tellurides
Monarch	Hesperus	Monarch Gold Mining Company	Durango	Gold, Silver (c)
Mountain Lily (a)	La Plata	A. J. Merritt and Edward Merritt	Walsenburg	Gold, Silver
Neglected	Durango	Colorado Juneau Mines, Inc.	854 Main Ave., Durango, Colo.	Gold, Silver (c)
Southern Boy (a)	Hesperus	Frank McCarvel	Hesperus	Gold, Silver (c)
Texas Chief (m) (a)	Durango	Texas Chief Mining Company	Durango	Gold, Silver (c)
Tomahawk (m)	Hesperus	Jewel Mining Company	735 East 17th St., Oklahoma City, Okla.	Gold, Silver (c)

(a) Operated for part of the year only. (c) No production reported in 1934. (m) Mill operated in connection with mine.

OPERATING MINES IN LARIMER COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
Buckhorn	Masonville	Buckhorn Mining and Milling Co.	Box 518, Fort Collins	Gold, Silver
Carter (a)	Masonville	Golden Age Mining Company	712 East Abriendo Ave., Pueblo	Gold (c)
Cash (a)	Eggers	Cash Gold Mining Company	2305 Gaylord St., Denver	Gold, Silver, Copper, Lead (c)
Colorado (a)	Log Cabin	Colonial Investment Company	Fort Collins	Gold, Silver (c)
Depression (a)	Bellvue	F. C. Meyers and Associates	University Bldg., Denver	Gold, Silver
Dixie Group (m)	Log Cabin	Dixie Gold Mining Company	608 South Meldrum St., Fort Collins	Gold, Silver (c) Gold (c)
Gold Coin	Log Cabin	Gold Coin Mining Syndicate	Log Cabin	Gold, Silver (c)
Goldora (a)	Bellvue	Goldora Mines	Fort Collins	Gold, Silver
Kelly (a)	Bellvue	R. G. Davis and Associates	Bellvue, Poudre Canon Route	Gold, Silver
Little Mary Mason (a)	Masonville	Masonville Mines, Inc.	1026 14th St., Greeley	Gold, Silver (c)
Livingston (a)	Loveland	Crystal Mountain Corporation	Symes Bldg., Denver	Beryllium
Lone Pine (a)	Masonville	Mrs. Anna Stotts Krutsinger	Masonville	Gold (c)
Lone Star (a)	Log Cabin	Louie and Frank Gueswel	Log Cabin	Gold, Silver (c)
Prodigal (a))	Log Cabin	J. P. Winters and Associates	Log Cabin	Gold, Silver, (c)
Rockfield (a)	Log Cabin	S. A. and W. T. Pendergast	Log Cabin	Gold, Silver, Copper (c)

OPERATING MINES IN MINERAL COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
Amethyst	Creede	Amethyst Lease	Creede	Silver, Lead
Commodore	Creede	Withrow-Commodore Lease, Inc.	Creede	Silver
Commodore Dump No. 3	Creede	Commodore Dump Lease Wallace I. Leary	Creede	Silver
Commodore Tunnel No. 5	Creede	Clark Lease—A. T. Clark, Sub Leaser	Creede	Silver, (c)
Corsair Mine Tunnel	Creede	Big Ben Mines, Inc.	410 North Union Ave., Pueblo	Silver
Ethel Lode	East Willow Creek	Recovery Leasing Co., (Partnership)	Creede	Gold, Lead
Last Chance	Creede	Emperius Mining Company	c/o B. T. Poxson, Golden	Silver, Lead
New York	Creede	K. M. and W. Lease	Creede	Silver, (c)
Pittsburgh	Creede	Emperius Mining Company	c/o B. T. Poxson, Golden	Silver, Lead
Recovery Tunnel on Ridge	Creede	Recovery Leasing Company	Creede	Silver, (c)

OPERATING MINES IN MONTROSE COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
Club (a)	Naturita	U. S. Vanadium Corporation	30 E. 42nd St., New York, N. Y.	Uranium, Vanadium (c)

OPERATING MINES IN MONTEZUMA COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
Battlerock Group (a)	Cortez	Henry Philips	Mancos	Gold, Silver, Copper (c)
Doyle (m) (a)	Mancos	Hesperus Mining Company	1825 Boatmens Bank Bldg., St. Louis, Mo.	Gold, Silver
Mancos Canyon	Mancos	Mancos Canyon Gold, Inc.	215 C. A. Johnson Bldg., Denver	Gold, Silver (c)
Red Arrow	Mancos	Red Arrow Gold Corporation	Mancos	Gold
Red Arrow Extension	Mancos	Red Arrow Extension Mining Co.	215 C. A. Johnson Bldg., Denver	Gold, Silver (c)

OPERATING MINES IN OURAY COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
Calliope	Ouray	B. P. Bailey	Box 752, Austin, Texas	Gold, Silver, Lead, Zinc (c)
Camp Bird (m)	Ouray	The King Lease, Incorporated	Ouray	Gold, Silver, Lead, Copper
Camp Bird (a)	Ouray	The Camp Bird Tunnel Mining & Transportation Company	Camp Bird Mills, Ouray	Gold, Silver, Lead, Copper (c)
Gold & Silver Mine & Mill	Ouray	Gold & Silver Mining & Milling Co.	Room No. 2, Missouri Bldg., Montrose	Gold, Silver, Copper (c)
Ida L. (m)	Ouray	Blue Eagle Mining Co., Associated	R. F. D. Ironton	Gold, Silver, Lead, Zinc
Jos. Mayer	Ouray	Jos. Mayer Company	81 Marion St., Seattle, Wash.	Gold, Silver
Pony Express	Ouray	Banner American Mining Company	Ouray	Gold, Silver, Lead, Zinc
Revenue Tunnel	Ouray	Revenue Mines, Limited	Telluride	Gold, Silver, Lead, Copper (c)
Sunday Group	Ouray	Gus A. Risch and Associates	Ouray	Gold, Silver
Treasury Tunnel	Ouray	San Juan Metals Corporation	Telluride	Gold, Silver, Lead, Copper (c)
Trust Ruby	Ouray	Hy. Ronna	Ouray	Gold, Silver
Wanakah (a)	Ouray	A. A. Moule and Associates	928 University Bldg., Denver	Gold, Copper

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(a) Operated for part of the year only. (c) No production reported in 1934. (m) Mill operated in connection with mine.

OPERATING MINES IN PARK COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
American (m)	Alma	Amer Mining Company	99 So. Downing St., Denver	Gold, Silver
Archibald (a)	Alma	Alma Archibald Gold Syndicate	725 U. S. National Bank Bldg., Denver	Gold, Silver
Bridal Chamber Tunnel	Alma	The West London Mines Co.	502 California Bldg., Denver	Gold, Silver
Briscoe Ranch	Alma	Benjamin Briscoe	Alma	Gold, Silver
Butte (a)	Alma	London Butte Gold Mining Company	Fairplay	Gold, Silver
Dolly Varden	Alma	Bi-Metallic Mines, Inc.	210 Tabor Bldg., Denver	Gold, Silver
Excelsior (a)	Alma	Bald Eagle Mining Company	3389 West 9th St., Denver	Gold, Silver
Iowa	Alma	Sonny Mines, Incorporated	930 So. Elizabeth St., Denver	Gold, Silver (c)
Kentucky Belle (m)	Alma	Summitt Mines Company	76 William St., New York City	Gold, Silver, Copper, Lead
London (m)	Alma	London Gold Mines Company	60 Independence Bldg., Colorado Springs	Gold, Silver
Manito Claims (a)	Como	Illinois Central Consolidated Mining & Milling Company	Box 167, Stockyards Station, R. F. D. No. 3, Denver	Gold, Silver (c)
Missouri (a)	Shawnee	Canabsa Mining & Milling Company	Littleton	Gold, Silver, Copper, Lead, Bismuth
Morning Star (m) (a) Alma and Creskill	Alma	Alma Syndicate, Inc.	707 First Nat'l Bank Bldg., Denver	Gold, Silver (c)
North London (m)	Alma	Fairplay Gold Mines, Inc.	Fairplay	Gold, Silver
Old London Millsite	Alma	Wm. A. Hyndman	2060 Birch St., Denver	Gold, Silver
Oliver Twist Tunnel (m)	Alma	London Mountain Gold Mining Co.	310 West 8th St., Leadville	Gold, Silver
Ophir (a)	Alma	M. B. Burke	301 Humboldt St., Denver	Gold, Silver (c)
Orphan Boy (a)	Alma	Colorado National Gold, Inc.	335 First Nat'l Bank Bldg., Colorado Springs	Gold, Silver, Lead
West London	Alma	West London Mining Company	Alma	Gold, Silver

OPERATING MINES IN PITKIN COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
Colorado Duluth	Aspen	Colorado Duluth Mining Company	704 Lonsdale Bldg., Duluth, Minn.	Silver, Lead
Highland Tunnel	Aspen	Highland Mines, Inc.	Aspen	Silver (c)
Hope Tunnel	Aspen	Philip J. Crosly	Aspen	Silver (c)
Midnight (m)	Queens Gulch	Midnight Mining Company	Aspen	Silver, Lead, Zinc

OPERATING MINES IN RIO GRANDE COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
Summitville (m) (Little Annie)	Summitville	Summitville Consolidated Mines, Inc.	Box 311, Monte Vista	Gold

OPERATING MINES IN ROUTT COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
Master Key (a)	Columbine	Primary Industries Corporation	342 Madison Ave., New York City	Gold, Silver, Copper (c)
New Deal (a)	Clark	Claud A. Smith & M. J. Ballard	Steamboat Springs	Gold, Silver (c)
Royal Flush (m) (a)	Columbine	Hahns Peak Gold Mining & Milling Company	Room 3, Algoma Bldg., Oshkosh, Wis.	Gold, Silver, Copper
Tom Thumb (a)	Columbine	Tom Thumb Leasing Company	Steamboat Springs	Gold, Silver (c)

OPERATING MINES IN SAGUACHE COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
Golden Treasure (m) (a)	Crestone	Golden Treasure Mining and Milling Corporation	Mack Building, Denver	Gold, Silver
Independent	Crestone	Luis Maria Baca Mining and Developing Company	1901 Lawrence St., Denver	Gold, Silver (c)
Josie K. Folsom	Del Norte	Josie K. Folsom Mining and Milling Company—Joe O. O'Brien, Mgr.	4280 Holly Ave., St. Louis, Mo., Del Norte	Gold (c)

OPERATING MINES IN SAN JUAN COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
Alethea Group	Silverton	Mystery Gold Mining Company	426 U. S. National Bank Bldg., Denver	Gold, Silver, Copper, Lead (c)
Delano Extension	Silverton	Roy Franch & Company	Silverton	Gold, Silver
Ezra R. Group	Silverton	The A. & M. Company	906 Hales Bldg., Oklahoma City, Okla.	Gold, Silver, Lead, Copper (c)

(a) Operated for part of the year only. (c) No production reported in 1934. (m) Mill operated in connection with mine.

OPERATING MINES IN SAN JUAN COUNTY, 1934—Continued

Name of Mine	Location	Operator	P. O. Address	Character of Product
Highland Mary-Trilby & Old Shenandoah (a)	Silverton	Highland Mary Mines, Inc.	926 Patterson Bldg., Denver	Silver, Copper, Lead (c)
Kansas City (a)	Silverton	Joe Ficco, Lessee	Silverton	Gold, Silver, Lead, Copper (c)
Little Fanny	Silverton	John Gilheany, Lessee	Silverton	Gold, Silver, Lead, Copper
Lucky Jack	Eureka	Lucky Jack Gold Mining Company	Delta	Gold, Silver, Lead, Zinc (c)
Maybell (a)	Silverton	San Juan Mining Company	418 Flynn Bldg., Des Moines, Iowa	Gold, Silver, Copper, Lead (c)
North Star Sultan	Silverton	North Star Sultan Mining Company	426 U. S. National Bank Bldg., Denver	Gold, Silver, Copper, Lead
Pride of The West	Howardsville	Pride of The West, Inc.	1720 California St., Denver	Gold, Silver, Lead, Copper, Zinc
Shenandoah-Dives (m)	Silverton	Shenandoah-Dives Mining Company	1000 Grand Avenue Temple, Kansas City, Mo.	Gold, Silver, Lead, Copper
Yukon Tunnel	Silverton	Gold Hub Mines Company	520 Denham Bldg., Denver	Gold, Silver, Lead, Zinc (c)

OPERATING MINES IN SAN MIGUEL COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
Black Bear	Telluride	Mulvey Consolidated Properties, Inc.	Telluride	Gold, Silver, Lead, Copper, Zinc
Favorite	Ophir	U. S. Mines of Colorado, Inc.	Ophir	Gold, Silver, Lead (c)
Golden Eagle	Telluride	M. J. Mallini	Telluride	Gold, Silver
La Junta	Telluride	I. J. McDonald	Telluride	Gold, Silver
Last Dollar (m)	Telluride	Last Dollar Gold Mining & Milling Company	Kansas City, Mo.	Gold, Silver, Lead, Copper
Mammoth (m)	Telluride	Maryland Mines Company	Telluride	Gold, Silver (c)
Nellie and Laura	Telluride	Paul Nardin	Telluride	Gold, Silver
San Bernardo (a)	Ophir	San Bernardo Mine	Telluride	Silver (c)
Silver Bell (a)	Ophir	Ophir Loop Mines	Ophir	Gold, Silver, Lead, Tungsten, Copper

Smuggler Union Bullion (a)	Telluride	Telluride Mining & Milling Co.	Telluride	Gold, Silver, Lead, Zinc
Smuggler Union (m) Pennsylvania Tunnel	Telluride	Telluride Mining & Milling Co.	Telluride	Gold, Silver, Lead, Zinc
Upper-Lower-Middle Groups (a)	Cedar	North Continent Mines, Inc.	Room 1210, First Nat'l Bank Bldg., Denver	Vanadium (Carnotite Ore)

OPERATING MINES IN SUMMIT COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
Atlantic and Pacific (a)	Breckenridge	Atlantic and Pacific Mining Corp.	Box C, Breckenridge	Gold, Silver (c)
Blue River (a)	Breckenridge	Artic Gold Mining Company	405 1st National Bank Bldg., Denver	Gold, Silver (c)
Boston (a)	Kokomo	Boston Gold Mining Company	Idaho Springs	Gold, Silver, Lead
Dunkin (a)	Breckenridge	Dunkin Gold Group Incorporated	Breckenridge	Gold, Silver, Lead
Fredonia (a)	Summit	O. J. Whitcomb	Raton, N. M.	Gold, Silver (c)
Frisco (a)	Frisco	The Frisco Mining and Milling Co.	616 Denham Bldg., Denver	Gold
Gold Crest (a)	Kokomo	Gold Crest Mining Company	1007 12th St., Golden	Gold, Silver (c)
Golden Beaver	Breckenridge	E. E. Bergman	2410 First Ave., Seattle, Wash.	Gold, Silver, Lead (c)
Jessie (a)	Breckenridge	Alex Matthiesen and Associates	Breckenridge	Gold, Silver
Jumbo (a)	Breckenridge	Jumbo Properties Incorporated	708 Colorado Bldg., Denver	Gold, Silver, Lead
Laurium Tunnel (a)	Breckenridge	Laurium Gold Consolidated	Breckenridge	Gold, Silver (c)
New Deal (a)	Breckenridge	New Deal Gold Mine	Oak Creek	Gold, Silver
New York and Viola Group	Breckenridge	Breckenridge Gold Mining Corp.	727 Cooper Bldg., Denver	Gold, Silver (c)
Pilot	Montezuma	George Robinson	Breckenridge	Gold, Silver, Lead (c)
Silver King (a)	Montezuma	Silver King Mines, Inc.	190 High St., Denver	Gold, Silver, Lead (c)
Tip Top (m)	Montezuma	Tra-Dollar Metal Mines Co.	1047 Josephine St., Denver	Gold, Silver (c)

OPERATING MINES IN TELLER COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
Acacia	Cripple Creek	Acacia Gold Mining Company	716 N. Wahsatch, Colo. Springs	Gold
Ada Bell (a)	Cripple Creek	Ada Bell Gold Mining Company	Lead, S. D.	Gold
Ajax	Victor	Colorado International Mining Corp.	Victor	Gold
Alamo-Rittenhouse (a)	Cripple Creek	R. A. Dooley	Cripple Crek	Gold
Alhambra (a)	Victor	Tri-City Mining Association	Box 117, Victor	Gold (c)

(a) Operated for part of the year only. (c) No production reported in 1934. (m) Mill operated in connection with mine.

OPERATING MINES IN TELLER COUNTY, 1934—Continued

Name of Mine	Location	Operator	P. O. Address	Character of Product
Alice	Elkton	Premium Gold Mining Company	1003 First National Bank Bldg., Denver	Gold
American Eagle	Bull Hill	American Eagle Gold Producers, Inc.	434 U. S. National Bank Bldg., Denver	Gold
Anna J.	Victor	Lee Baker and Company	Victor	Gold
Anna May Wells (a)	Cripple Creek	E. W. Shrock & Company	Cripple Creek	Gold
Baumgardner Shaft & Others	Gold Hill	The Atlas Gold Mines Company	604 E. Fontanero, Colorado Springs	Gold
Block 8, School Section	Cripple Creek	Kyner Leasing Co.	Cripple Creek	Gold
Blue Bell (a)	Cripple Creek	Triad Mining Corporation	1907 Grand Ave., Kansas City, Mo.	Gold (c)
Bonnie Nell & Others	Raven Hill	El-Crest Mining Company	1009 U. S. National Bank Bldg., Denver	Gold
Buck Shaft (a)	Gold Hill	Lewis Filley & Fred Linneman	Cripple Creek	Gold
C. K. & N.	Cripple Creek	Mrs. Anna R. Wilder	Cripple Creek	Gold
Cameron Townsite	Cripple Creek	Cameron Gold Mines, Inc.	507 Empire Bldg., Denver	Gold
Cardinal Tunnel (a)	Cripple Creek	Virgil H. Kitrell	Lincoln, Nebr.	Gold (c)
Carper Shaft	Cripple Creek	Altman Mines Company	214 E. Colo. Ave., Colorado Springs	Gold
Champion Claim (a)	Mineral Hill	Sam B. Bailey and Associates	317 E. 5th Ave., Cheyenne, Wyo.	Gold (c)
Cheyenne Tunnel (a)	Bull Hill	Ras-Nee Mines, Inc.	1009 U. S. National Bank Bldg., Denver	Gold
Clyde (a)	Victor	Detroit-Cripple Creek Gold Mining Co.	307 W. Fort St., Detroit, Mich.	Gold (c)
Colorado City (a)	Victor	Colorado Gold, Inc.	Cripple Creek	Gold
Colorado King	Cripple Creek	Premium Gold Mining Co.	1003 First National Bank Bldg., Denver	Gold
Commonwealth Shaft, No. 1 and Requa Savage	Cripple Creek	Commonwealth Gold, Inc.	406 Guardian Trust Bldg., Denver	Gold
Comstock Hill (a)	Woodland	Guy S. Boyd	Woodland Park, Box 110	Gold (c)
Coriolanus	Victor	Premium Gold Mining Company	1003 First National Bank Bldg., Denver	Gold
Cresson	Cripple Creek	Cresson Consolidated Gold Mining & Milling Company	Box 86, Colorado Springs	Gold
Dante (a)	Victor	John Sharp & Company	Cripple Creek	Gold
Deadwood (a)	Victor	Gold Bullion Mines, Inc.	Cripple Creek	Gold
Economic Mill Dump	Cripple Creek	Economic Dump Leasing Company	349 E. Bennett Ave., Cripple Creek	Gold
Elkton	Cripple Creek	The Elkton Company J. V. L. Mining Company	Golden Cycle Bldg., Colorado Springs 302 P. O. Bldg., Cripple Creek	Gold
Ellithorpe Shaft (a)	Gold Hill	H. J. McGuire and Associates	Cripple Creek	Gold

El Paso	Cripple Creek	New El Paso Mines, Inc.	520 U. S. National Bank Bldg., Denver	Gold
Empire State	Cripple Creek	Empire Lee Mining Company	J. W. Ady, Jr., 222 Burns Bldg., Colorado Springs	Gold
Fairview (a)	Cripple Creek	R. & W. Leasing Company	520 U. S. National Bank Bldg., Denver	Gold (c)
Favorite (a)	Victor	William Art Gold Mining Company	914 E. Platte Ave., Colorado Springs	Gold
Forest Queen	Cripple Creek	A. L. Anderson & C. O. Johnson	Cripple Creek	Gold
Free Coinage	Cripple Creek	Free Coinage Gold Mining Company	716 N. Wahsatch, Colorado Springs	Gold
Friday	Cripple Creek	Clarence H. Roerig	Box 172, Cripple Creek	Gold
Gillet Mill Tailings (a)	Gillet	Frank Vetters	Cripple Creek	Gold
Gold Bond (a)	Cripple Creek	Paul D. Swan	1801 Wood Ave., Colorado Springs	Gold
Gold Coin	Victor	W. D. Wade & Company	Victor	Gold
Gold Dollar	Cripple Creek	Trio Gold Mining Company	614 Park Terrace, Colorado Springs	Gold
Gold Sovereign (a)	Victor	Evan J. Williams	Cripple Creek	Gold
Golden Globe	Cripple Creek	Golden Globe Mining Corporation	No. 5 McIntyre Bldg., Colorado Springs	Gold
Henry Adney (a)	Cripple Creek	The Adney Gold Mining Company	1511 N. Tejon St., Colorado Springs	Gold (c)
Hill Top	Cripple Creek	Shirley D. Johnson and Fred C. Carstarphen	1010 First National Bank Bldg., Denver	Gold (c)
Hull City	Independence	Hidalgo Gold Mines, Inc.	520 U. S. National Bank Bldg., Denver	Gold
Index (a)	Cripple Creek	Gold Mines Consolidated Corp.	316 C. A. Johnson Bldg., Denver	Gold
Ironclad (m) (a)	Cripple Creek	Thomas Kavanaugh	Cripple Creek	Gold
Jerry Johnson	Cripple Creek	Jerry Johnson Gold Mining Co.	% F. H. Denman, Cripple Creek	Gold
Jo Dandy	Raven Hill	New Zealand Gold Mines, Inc.	Box 212, Manitou	Gold
John A. Logan	Bull Hill	International Gold Producers, Inc.	817 17th St., Denver	Gold
Kitty Wells No. 2 (a)	Carbonate Hill	Harry N. Dilts	442 N. Prospect, Colorado Springs	Gold (c)
Last Dollar (a)	Victor	U. G. M. Company	Box 86, Colorado Springs	Gold
Leonetta (a)	Woodland	W. L. Fitzgerald	2807 W. Pikes Peak, Colorado Springs	Gold (c)
Little Florence (a)	Mineral Hill	The Majestic Gold Mining Co.	1927 N. Tejon St., Colorado Springs	Gold (c)
Lone Pine (a)	Mineral Hill	The Lone Pine Gold Mining Co.	205 Pueblo Savings Bank Bldg., Pueblo	Gold (c)
Longfellow (a)	Victor	Bethlehem-Longfellow Mining and Milling Co.	Dallas, Tex.	Gold

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OPERATING MINES IN TELLER COUNTY, 1934—Continued

Name of Mine	Location	Operator	P. O. Address	Character of Product
Los Angeles	Bull Hill	Tennessee Mines Inc.	U. S. National Bank Bldg., Denver	Gold
		Colorado Gold, Inc.	Cripple Creek	Gold
Mary McKinney Howard Shaft	Cripple Creek	The LeClair Consolidated Mines Co.	J. T. Milliken, Box 186, Colorado Springs	Gold
May B.	Victor	The May B Mining Company	Box 474, Victor	Gold
Midget, Bonanza King	Cripple Creek	Atlas Gold Mines Co.	Frank D. Doepke, 604 E. Fontanero, Colorado Springs	Gold
Milton Smith (a)	Cripple Creek	Milton Smith Lease	1617 W. Boulder St., Colorado Springs	Gold
Mollie Kathleen	Cripple Creek	Snar Mining Company	Cripple Creek	Gold
Monroe (a)	Cripple Creek	James Flood	Hendrie and Bolthoff, Denver	Gold
Moose and Bertha B.	Cripple Creek	Moose Mine Operations, Inc.	307 Colo. Natl. Bank Bldg., Denver	Gold
North Gold Sovereign (a)	Victor	E. S. Byrd and Company	Victor	Gold (c)
North Star (a)	Globe Hill	Waldo Tredahl and Associates	Cripple Creek	Gold
North Star and Holliston Group	Victor	North Star Holliston Mining Co.	Box 555, Victor	Gold (c)
Oak Claim	Victor	Odeica Mining Company	405 First National Bank Bldg., Denver	Gold
Orpha May (a)	Victor	Orpha May Mining Company	Box 26, Cripple Creek	Gold
Patti Rosa (a)	Cripple Creek	Tennessee Mines, Inc.	1337 Gaylord St., Denver	Gold (c)
Pharmacist	Cripple Creek	Pharmacist Gold Mining Co.	L. G. Carlton, 349 E. Bennett Ave., Cripple Creek	Gold
Pinnacle (a)	Cripple Creek	Mexican Gold & Silver Mining Co.	1109 Alexander Bldg., San Francisco, Calif.	Gold
Portland, Last Dollar, Independence, Colo. City	Victor	The United Gold Mines Co.	Golden Cycle Bldg., Colorado Springs	Gold
Portland No. 3 (a)	Victor	Joseph Thomas and James Bowden	Victor	Gold
Prince Albert and Black Belle	Victor	Prince Albert Trust Estate	Victor	Gold
Queen (a)	Cripple Creek	Queen Leasing Company	4440 Lindell Blvd., St. Louis, Mo.	Gold
Queen Dump (a)	Cripple Creek	J. T. Milliken, Jr.	4440 Lindell Blvd., St. Louis, Mo.	Gold
Ramona (a)	Cripple Creek	J. M. Hemby and Company	Cripple Creek	Gold
Raven-Beacon (a)	Cripple Creek	The Raven and Beacon Hill Gold Mining Company	Golden Cycle Bldg., Colorado Springs	Gold

Rhyolite Chief and National Debt	Spring Creek	Frank Darlington, Fred Ruton	Box 235, Cripple Creek	Gold	(c)
Rose Nicol	Cripple Creek	United Gold Mines Company	Box 86, Colorado Springs	Gold	
Sangre De Cristo (a)	Tenderfoot Hill	Isis Gold Mining Company	4050 Montview Blvd., Denver	Gold	
Santa Rita	Victor	The Santa Rita Mines Corporation	1000 Carteret St., Pueblo	Gold	
Santa Rita No. 2 (a)	Victor	Walton and Company	Victor	Gold	
Sleepy Hollow	Victor	Cripple Creek Gold Exploration Co.	Box 211, Victor	Gold	(c)
Solomon	Cripple Creek	Solomon Leasing Company	Cripple Creek	Gold	
South Burns Shaft (a)	Cripple Creek	Colorado Gold Mines, Inc.	Colorado Hotel, Denver	Gold	
Specimen	Victor	Gerald Thomas and Bert Bielz	Victor	Gold	
Stratton	Cripple Creek	Stratton Cripple Creek Mining & Development Company	Cripple Creek	Gold	
Strong	Victor	Strong Leasing and Mining Co.	432 U. S. National Bank Bldg., Denver	Gold	
Summit (a)	Cripple Creek	Stratton Cripple Creek Mining and Development Company	Cripple Creek	Gold	(c)
Sunshine-Sedan (a)	Galena	Colo. International Mining Corp.	Victor	Gold	(c)
Swanson (a)	Victor	Cox and Associates	Adam's Crossing, Colorado Springs	Gold	
Theresa Shaft	Victor	United Gold Mines Co.	Golden Cycle Bldg., Colorado Springs	Gold	
Twin Sisters (a)	Cripple Creek	Gordon Mining Company	Box 562, Victor	Gold	
Uncle Sam (a)	Victor	Lester England and Associates	Box 146, Independence	Gold	(c)
Upper Granite	Victor	V. and V. Mng. & Leasing Co.	604 First National Bank Bldg., Denver	Gold	
Victor	Victor	Hidalgo Gold Mines, Inc.	520 U. S. National Bank Bldg., Denver	Gold	
Vindicator	Victor	United Gold Mines Co.	Box 86, Colorado Springs	Gold	
Wagner (a)	Mineral Hill	North American Mines Co.	75 Federal St., Boston, Mass.	Gold	
White Rose and Monmouth (a)	Carbonate Hill	J. S. Kirk and Scot Sard	Box 164, Cripple Creek	Gold	(c)
Wild Horse	Midway	Wild Horse Leasing Co.	2091 Eudora St., Denver	Gold	

(a) Operated for part of the year only. (c) No production reported in 1934. (m) Mill operated in connection with mine

OPERATING QUARRIES AND CLAY PITS, 1934

Town	County	Name	Product	Operator	Address
Lyons	Boulder	Saint Vrain Red Sandstone	Red Sandstone	J. C. Brodie	609 Interstate Trust Bldg., Denver
Monarch	Chaffee	Monarch Lime	Lime Rock	Colorado Fuel & Iron Co.	Pueblo
Hillside	Custer	Gem Park Vermiculite	Vermiculite	Allied Minerals, Inc.	Box 475, Pueblo
Castle Rock	Douglas	Castle Rock City Clay	Plastic Clay	Town of Castle Rock	Castle Rock
Littleton	Douglas	Helmer Fire Clay	Fire Clay	T. L. Helmer	Silica
Littleton	Douglas	Helmer Limestone Quarries	Limestone	T. L. Helmer	Silica
Littleton	Douglas	Helmer Red Clay Quarry	Red Clay	T. L. Helmer	Silica
Littleton	Douglas	Helmer White Sand Silica	Silica Sand	T. L. Helmer	Silica
Castle Rock	Douglas	Johnson Clay	Plastic Clay	H. G. Johnson	Castle Rock
Manitou	El Paso	Black Canon Quarry	Limestone	Thomas & Brown Lime Co.	9th and Bradford Sts., Pueblo
Colo. Springs	El Paso	Coleman Granite Monument	Granite	V. D. Coleman Granite Co.	1025 N. Cedar St., Colorado Springs
Colo. Springs	El Paso	Lennox Breed	Limestone	Holly Sugar Corporation	Colorado Springs
Manitou	El Paso	Manitou Green Stone	Red Limestone. Green Sandstone	J. V. K. Wagor	Woodland Park
Manitou	El Paso	Western Lime Rock	Lime	Thomas & Brown Lime Co.	9th and Bradford Sts., Pueblo
Canon City	Fremont	Burnito Quarry	Ganister	S. Vernon St. John	Canon City
Canon City	Fremont	Climax	Fire Clay	Diamond Fire Brick Co.	Canon City
Texas Creek	Fremont	Coleman India Pink	Granite	V. D. Coleman Granite Co.	1025 N. Cedar St., Colorado Springs
Oak Creek	Fremont	Coleman Oak Creek	Granite	V. D. Coleman Granite Co.	1025 N. Cedar St., Colorado Springs
Portland	Fremont	Colorado Portland Plant & Quarry	Cement, Plaster, Limestone	Colorado Portland Cement Co.	Denver National Bldg., Denver
Canon City	Fremont	Deer Hill	Fire Clay	Diamond Fire Brick Co.	Canon City
Canon City	Fremont	Devil Hole Lode	Mica, Feldspar, Beryl	E. E. Zingheim	Box 190, Orchard Ave., Canon City
Canon City	Fremont	Diamond Flint Fire Clay	Fire Clay	Diamond Fire Brick Co.	Canon City
Canon City	Fremont	Eight Mile Park Silica Quarry	Silica Rock	Standard Fire Brick Co.	Box 654, Pueblo
Canon City	Fremont	Four Mile & Horney	Silica Rock	Diamond Fire Brick Co.	Canon City
Coaldale	Fremont	Gypsum Quarry	Gypsum	Portland Cement Co.	Denver
Canon City	Fremont	Myra	Fire Clay	Diamond Fire Brick Co.	Canon City
Wellsville	Fremont	Rogers' Quarry	Limestone	George A. Rogers	648 H St., Salida
Texas Creek	Fremont	Rose Pink Granite	Granite	Salida Granite Corporation	Salida
Canon City	Fremont	Shipley	Feldspar and Mica	Ralph H. Magnuson Western Feldspar Milling Co.	 1333 W. Maple St., Denver

Canon City	Fremont	Stanko Feldspar	Feldspar and Mica	Ralph H. Magnuson Western Feldspar Milling Co.	1333 W. Maple St., Denver
Canon City	Fremont	Swastika	Fire Clay	Diamond Fire Brick Co.	Canon City
Twin Lakes	Fremont	U. S. Marble & Travertine	Travertine and Marble	U. S. Marble Company	404 Temple Court Bldg., Denver
Wellsville	Fremont	Wallen Quarry	Limestone	Frank H. Norberg, Inc.	979 Madison St., Denver
Salida	Fremont	Wellsville Travertine	Travertine	Colorado Travertine Co.	162 N. Franklin St., Chicago, Ill.
Glenwood Springs	Garfield	Glenwood Lime	Lime Rock	Holly Sugar Corporation	Golden Cycle Bldg., Colorado Springs
Marble	Gunnison	Yule Marble Quarry & Mill Plant	Marble	Yule Colorado Marble Co.	Proctor, Vt.
Golden	Jefferson	Coors Clay and Porcelain	Clay	Coors Porcelain Company	8th and Ford St., Golden
Golden	Jefferson	Crucible Clay	Fire Clay	George W. Lindsay	Box 1107, Denver
Golden	Jefferson	Lindsay Clay Quarry and Plant	Clay	Denver Fire Brick Co.	31st and Blake Sts., Denver
Golden	Jefferson	Rockwell Clay	Clay	George W. Parfet Estate, Inc.	Golden
Golden	Jefferson	Rubey Clay	Clay	The H. M. Rubey Clay Co.	Golden
Golden	Jefferson	Terra Cotta Clay and Plant	Clay	Northwestern Terra Cotta Co.	1740 Wright Wood Ave., Chicago, Ill.
Golden	Jefferson	Vergie No. 2	Feldspar	Ralph H. Magnuson Western Feldspar Milling Co.	1333 W. Maple St., Denver
Laporte	Larimer	Boettcher Cement Quarry and Mill	Limestone and Shale	Colorado Portland Cement Co.	Denver National Bldg., Denver
Laporte	Larimer	Clark Quarries	Limestone	Clark Quarries, Inc.	Box 503, Fort Collins
Laporte	Larimer	Gypsum Quarry	Gypsum Rock	S. H. Roberts and Associates	Laporte
Bellvue	Larimer	Josefson Quarry	Limestone	John Josefson	Bellvue
Loveland	Larimer	U. S. Gypsum Quarry and Mill	Gypsum Plaster and Wallboard	United States Gypsum Co.	300 W. Adams St., Chicago, Ill.
Creede	Mineral	Ultimate Tunnel No. 1	Clay	Peerless Clay and Mineral Co.	First National Bank Bldg., Pueblo
La Junta	Otero	La Junta Shale and Brick	Blue Shale Brick and Tile	La Junta Clay Products, Inc.	La Junta
Beulah	Pueblo	Beulah Limestone Quarry	Limestone	Frank H. Norberg, Inc.	979 Madison St., Denver
Pueblo	Pueblo	Pueblo Lime Burning Plant and Mill	Lime	Thomas Coal & Lime Co.	9th and Bradford Sts., Pueblo
Pueblo	Pueblo	Standard Fire Brick Plants	Silica Brick, Fire Brick and Sewer Tile	Standard Fire Brick Co.	Pueblo
Stone City	Pueblo	Stephens' Gypsum	Gypsum	Thomas Coal & Lime Co.	9th and Bradford Sts., Pueblo
Pueblo	Pueblo	Stone City Clay Mines and Kilns	Fire Clay	Pueblo Clay Products Co.	9th and Bradford Sts., Pueblo
Pueblo	Pueblo	Summit Pressed Brick and Tile Company	Building Brick and Tile	Summit Pressed Brick and Tile Company	Pueblo

OPERATING MILLS AND SMELTERS, 1934

Character of Plant	Town	Operator	County	Address
Arsenic and Cadmium Refinery	Denver	American Smelting and Refining Company	Adams and Denver	631 First National Bank Bldg., Denver
Colorado Smelting and Refining	Denver	Colorado Smelting and Refining Company	Adams and Denver	1277 So. Cherokee, Denver
Boulder Ore Sampler	Boulder	St. Joe Mining and Milling Company	Boulder	Albany Hotel, Boulder
Black Cloud Custom Mill	Boulder	A. L. Beckett and Associates	Boulder	920 E. 15th St., Oklahoma City, Okla.
Nancy Mill	Boulder	R. B. Johnston, Lessee	Boulder	Wallstreet Star Route, Boulder
Tungsten Custom Mill	Nederland	Wolf Tongue Mining Co.	Boulder	First National Bank Bldg., Boulder
Vickery Custom Mill	Jamestown	H. S. Vickery	Boulder	Jamestown
Ore Chemical Company Mill	St. Elmo	Ore Chemical Company	Chaffee	40 Rector St., New York, N. Y.
Argo Mill	Idaho Springs	King Kong Mines, Inc.	Clear Creek	210 Tabor Bldg., Denver
Idaho Springs Ore Sampler and Custom Mill	Idaho Springs	Clear Creek and Gilpin Ore Company	Clear Creek	Idaho Springs
Mammoth Custom Mill	Silver Plume	Consolidated Smelter and Metals Company	Clear Creek	4775 East 6th Ave., Denver
Golden Cycle Mill	Colorado Springs	Golden Cycle Corporation	El Paso	Second Floor Golden Cycle Bldg., Colorado Springs
Mill Tailings Recovery Plant	Colorado Springs	Mill Tailings Recovery Co.	El Paso	601 No. Chestnut St., Colorado Springs
Bee Zee Concentrating Mill	Florence	Bee Zee Metallic Company	Fremont	1722 Culebra Pl., Colorado Springs
Empire Zinc Plant	Canon City	Empire Zinc Co.	Fremont	Canon City
Farr Western Custom Mill	Blackhawk	Lloyd A. Farr	Gilpin	Central City
Mica Grinding Plant	Pueblo	General Mica, Inc.	Pueblo	211 First National Bank Bldg., Pueblo
Peerless Clay Grinding Plant	Pueblo	Peerless Clay and Mineral Co.	Pueblo	211 First National Bank Bldg., Pueblo
Arkansas Valley Smelter	Leadville	American Smelting and Refining Company	Lake	631 First National Bank Bldg., Denver
Tennessee Park Mill	Tennessee Park	Tennessee Park Milling Co.	Lake	Leadville
U. G. M. Rock Crushing	Victor	U. G. M. Company	Teller	Box 86, Colorado Springs

OPERATING PLACERS AND DREDGES, 1934

Name	Town	County	Operator	Address
Pantle	Granite	Chaffee	Walter Pantle	700 Block, Euclid St., Pueblo
U. S. Dredge	Granite	Chaffee	U. S. Dredging Company	Chamber of Commerce Bldg., Colorado Springs
U. S. Gold Suction Dredge	Granite	Chaffee	U. S. Gold Dredging	Granite
Boat	Idaho Springs	Clear Creek	J. W. Friend	4205 W. 23rd Ave., Denver
Gold Pit	Idaho Springs	Clear Creek	Gold Pit Placer Mines	Idaho Springs
Harvey Ranch	Castle Rock	Douglas	Loren Baldwin & V. T. Harvey	Castle Rock
Warren Ranch	Franktown	Douglas	J. L. Warren	607 First National Bank Bldg. Denver
Lucky Charles	Blackhawk	Gilpin	Lucky Charles Mining & Milling Company	2594 So. Acoma St., Denver
Lump Gulch	Rollinsville	Gilpin	Lump Gulch Mining Company	317 Railway Exchange Bldg., Denver
Pactolus	Pine Cliff	Gilpin	V. O. Glover and Associates	Pine Cliff
Aulder Gulch	Cowdrey	Jackson	Sam Swire	Walden
Mitchell	Cowdrey	Jackson	W. N. Thompson & Associates	Cowdrey
Humphreys Gold Corporation	Golden	Jefferson	Humphreys Gold Corporation (Quaintance Lease)	1130 First National Bank Bldg. Denver
Hallenbeck Dry Land Dredge	Twin Lakes	Lake	C. V. Hallenbeck	251 Kalamath St., Denver
Grant	Lay	Moffat	Grant Placer Mine	Lay
Home	Lay	Moffat	A. E. Bamber and Associates	Lay
Livingston	Craig	Moffat	I. D. Livingston	Baggs, Wyo.
Selig	Craig	Moffat	Selig Family, W. H. Selig and S. Arnett	Baggs, Wyo.
Timberlake	Craig	Moffat	A. W. Buell and W. J. Portis	Midwest, Wyo.
Zimmerman	Craig	Moffat	Amazon Placer Syndicate	Great Divide
Alma	Alma	Park	E. W. Hitchins	Alma
Beaver	Fairplay	Park	J. B. Johnson and Associates	Fairplay
Brisco, United Real Estate & McConnel	Fairplay	Park	Wm. H. Beckwith, Trustee S. Standish (Agent)	Morris Paper Company, 33 N. LaSalle St., Chicago, Ill.
Crown	Fairplay	Park	R. T. Bunney and Associates	Fairplay
East End of Alma	Alma	Park	Lode & Placer Mines, Inc.	210 Tabor Bldg., Denver
Fortune Tarryall	Como	Park	Grant Shields, Jewel Placer, Inc.	1301 So. York St., Denver
Miller & Sheldon	Fairplay	Park	H. H. Rice and Associates	Fairplay
Wilson	Como	Park	Peerless Mining Company	1344 12th St., Denver
Bemrose	Breckenridge	Summit	Hoosier Mines Company	746 Equitable Bldg., Denver
Blue River Continental Dredge	Breckenridge	Summit	Continental Dredging Company	1716 California St., Denver
Buffalo	Dillon	Summit	Buffalo Placer Mining Co.	Dillon
Carpenter	Tiger	Summit	E. H. Deibert and A. R. Leslie	Breckenridge
Center, Dorset and Gem	Kokomo	Summit	McNulty Placer, Inc.	319 C. A. Johnson Bldg., Denver
Long Island	Breckenridge	Summit	Chris George and Associates	Breckenridge

OPERATING PLACERS AND DREDGES, 1934—Continued

Name	Town	County	Operator	Address
Louie D.	Breckenridge	Summit	J. C. Hummel and Associates	Breckenridge
Riggle	Breckenridge	Summit	Walter Riggle	Breckenridge
Tiger Placer Company	Breckenridge	Summit	Tiger Placer Company	Tiger
Washington	Breckenridge	Summit	C W. Hale and Associates	Breckenridge
Wire Patch	Breckenridge	Summit	Royal Tiger Mines Company	Tiger
Yuba	Breckenridge	Summit	Sam I. Godman	314 Denham Bldg., Denver
Gold Run Placer and Mill	Telluride	San Miguel	San Juan Metals Corp.	Telluride
Gold Geyser No. 1, 2	Cripple Creek	Teller	Frank B. Gates and Associates	Cripple Creek

LIST OF OPERATING FLUORSPAR MINES IN VARIOUS COUNTIES IN COLORADO

OPERATING MINES IN BOULDER COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
Esmeralda (a)	Jamestown	W. M. Baldwin and Associates	Jamestown	Fluorspar (c)

OPERATING MINES IN CHAFFEE COUNTY, 1934

Name of Mine	Location	Operator	P. O. Address	Character of Product
American Fluorspar Mines	Salida	American Fluorspar Corporation	% H. A. Hamilton, McIntyre Bldg., Colorado Springs	Fluorspar
Bluestone (a)	Browns Canon	Perry Bertchy, Jake Bertchy and Wesley Gregg	408 Dodge, Salida	Fluorspar
Happy Thought (a)	Salida	Perry Bertchy, Jake Bertchy and Wesley Gregg	408 Dodge, Salida	Fluorspar (c)
Jackrabbit (a)	Browns Canon	George Gresham & Willard Bertschy	Salida	Fluorspar
Joe Robesnick	Browns Canon	Colorado Fluorspar Company	101 N. 1st St., Salida	Fluorspar
Last Chance (a)	Browns Canon	Frank Mansheim	Salida	Fluorspar
Wonder Lode (a)	Browns Canon	William Lantzendorf	Salida	Fluorspar

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(a) Operated for part of the year only. (c) No production reported in 1934.